

AMERICAN VETERINARY REVIEW.

EDITED AND PUBLISHED MONTHLY BY

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AMERICAN VETERINARY REVIEW.

OCTOBER, 1906.

Correspondents will please note the change in address of Dr. Roscoe R. Bell, from Seventh Avenue and Union Street, to 710 East Second Street, Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, Aug. 15, 1906.

BOVINES CAN BE INOCULATED WITH GLANDERS—For a long time bovines have been regarded as refractory to glanders, either by contagion or any experimental transmission. An extract from the *Archiva Veterinaria*, which I find in the *Journal of Comparative Pathology and Therapeutics*, seems to indicate that this belief must be abandoned. Notwithstanding the numerous experiments recorded by Renault, Bouley, Gerlach, Hertwig, Cadeac, Marcone, Nocard, etc., etc., Rigler and Ciacu have made experiments which leave no doubts on the question. In a first attempt, where a calf had been injected with glanders bacilli and which had had a temporary fever, the result was an abscess, which contained virulent pus. The abscess healed without leaving any traces. The calf showed no lesions at the post-mortem. Other attempts were made by injections into the peritoneal cavity, into the veins and the substance of the testicle, but without giving rise to any peculiar manifestations, except temporary fever, dyspnoea, and arthritis, which disappeared in due time. At the post-mortem no lesions were found.

With the hope of finding an anti-glanderous serum, these

experimenters were led to inoculate bovines. In 1899, and later, in 1901, a cow was inoculated subcutaneously with morvine in increasing doses, and she received altogether about 625 cub. centim. of Nocard's strong mallein. The serum of that cow had no specific action on glanders bacilli *in vitro*, and when injected into guinea-pigs simultaneously with glanders it proved ineffective. They then injected a certain quantity of four cultures into the veins. After a few days more, and later on more. After fifteen days, blood was extracted and the serum tested on guinea-pigs. It seemed to have a slight preventive and curative effect. To increase this action, sixteen agar cultures of glanders bacilli were injected into the same cow, but she died a few hours after, showing only diffusible congestion and fatty liver at post-mortem.

* * *

This result was not very conclusive. In 1904 new experiments were started. A second cow received intravenously dead glanderous bacilli very virulent, which was used for the preparation of mallein. Intense fever followed and the temperature rose above 40° C. This condition lasted for several days. Finally the animal dropped down and could not be made to get up again; she then had dyspnoea; bed sores made their appearance and a little sero-purulent discharge from the nostrils could be detected, from which cultures of bacilli were obtained. Besides these manifestations two round ulcers were also observed on the septum nasi, which was covered with mucus and crusts. The cow died some days after, and at the post-mortem examination typical glanderous lesions were found. The nasal mucous membrane, the septum nasi and the turbinated bones showed glanderous ulcers and nodules; the pulmonary veins exhibited thrombi, the submaxillary and bronchial lymphatic glands contained glanderous centres, while the subcutaneous tissue revealed glanderous nodules. Cultures were made from the blood, from the internal organs, lymphatic glands and other lesions, and mice and rabbits were inoculated to test the virulency of the bacilli and the cultures grew very

handsomely. The results of these were positive.

From this it is shown that bovines can be experimentally inoculated with glanders.

* * *

AS TO THE INTESTINAL ORIGIN OF PULMONARY TUBERCULOSIS.—The subject of tuberculosis is still occupying the attention of investigators and many are the records of experiments that are to be found in scientific papers.

Among them is one from Professors Calmette and Guerin on the intestinal origin of pulmonary tuberculosis. After recalling the words of Behring, "Pulmonary tuberculosis of adults is almost always the result of an intestinal infection which occurred in youth and has developed later on," they studied the question in young and adult animals by feeding young goats and adult she goats with milk containing bacilli of various origins, such as bovine, human, aviary, etc. The result was that, whatever had been the age of the animals, pulmonary tuberculosis, *not inoculated*, is always derived from a primitive intestinal infection; but, while in *adults* the bacilli would leave no mark of their passage through the lymphatic system of the intestine, in the *young*, on the contrary, pulmonary tuberculosis occurs only when the mesenteric glands, which in them were extensively diseased at post-mortem, cannot retain the tuberculous bacilli and prevent them from being carried away in the lymphatic circulation. As a practical conclusion, they say, that it is indispensable to teach the tuberculous individual to expectorate and not to swallow his sputa from the moment these contain bacilli. In natural conditions, dusts are infecting, not because they are inhaled, but because they are swallowed.

* * *

Following on the same subject and continuing his researches on the pathogeny of tuberculosis, Prof. Vallée carried out other experiments, placing himself in the conditions of natural infection. Eleven calves, free from disease, aged from 8 to 25 days, received during three months the raw milk of

four Norman cows, three of which reacted to tuberculin without showing any clinical sign of tuberculosis. These cows being killed at the end of the experiment, two presented softened massive alterations of the tracheo-bronchial and mediastinal lymphatic glands; in the third there were also small lesions in the udder. At the age of three months, all the calves reacted to tuberculin; they were weaned, kept four weeks more and killed. At the autopsy, *nine of them presented exclusively well marked lesions of tuberculosis* in the bronchial and mediastinal glands. But not one had the smallest alteration of any of the mesenteric glands; these contained, however, few bacilli, as shown by inoculation of guinea-pigs. The two other calves had besides a single pulmonary lesion, in appearance of more recent formation than those of the glands. These results differ some from those I have spoken of above, and Prof. Vallée explains them as being due to the difference in the quantity of bacilli used by Profs. Calmette and Guérin. The conclusions are: In the young, as in the adults, pure pulmonary tuberculosis can result from an intestinal infection, and it can no longer be considered as primitive and due to the inhalation of virulent dusts. "No one can pretend that these conditions can be different in the young herbivora and the young child." Thus we can explain the frequency of the tracheo-bronchial adenopathy of tuberculosis, observed in children of all ages, which die incidentally, and therefore the hypothesis of Behring can be modified, by saying, "that many cases of pulmonary tuberculosis of adults proceed from the awakening of tuberculous lesions of the bronchial glands consecutive to an infection by the digestive tract in youth, not manifested externally by mesenteric adenopathies."

* * *

Finally these differences of opinion from such high authorities on the subject were settled by another communication from the first writers, which was made at the Académie des Sciences, in which it is stated that they have made further experiments and these confirm in all points the results obtained by Prof. Vallée, they using in their last experiments smaller doses of bacilli, as

he had suggested. Here are their final conclusions: (1) Experimentally in animals, and clinically in children, whenever the tuberculous infection is manifested by tracheo-bronchial lesions of adenopathy, there are tuberculous bacilli in the mesenteric glands, even when these seem to be healthy. (2) Mesenteric glandular infection preceding the apparition of the tracheo-bronchial adenopathic lesions must be considered, as well as the pulmonary tuberculosis of children and adults also, as resulting from a tuberculous infection of intestinal origin.

Actually, direct contamination by the respiratory canal not being proved by irreproachable experiment, it seems more and more evident that children as well as adults contract tuberculosis in absorbing either milk from diseased animals or taking in dusts or food soiled with bacilli or with tuberculous sputa of human origin.

* * *

STERILIZED TUBERCULOUS MEAT NON-TOXIC.—Will the consumption of tuberculous meats, products or organs, previously sterilized, be followed by intoxication? This is a question that Professor Galtier, of Lyon, has solved by experimentation.

Recently Calmette and Breton, experimenting on guinea-pigs, found that repeated ingestions of tuberculous bacilli, sterilized by heat at 100°, can be dangerous for subjects affected with tuberculosis and might not be innocuous for healthy individuals. They concluded by advising the necessity of excluding for the alimentation of man the milk of tuberculous cows.

In relation to the meat of tuberculous animals, there is no need to have any fear, if properly cooked. Cooking destroys all virulency, and the toxine that may exist is in such small quantity that it would have no effect. Muscular structure is very seldom invaded with tuberculous lesions, and no dangerous toxicity seems to be inherent to it, if one judges from existing facts. Before the organization of the inspection of meat, almost all the products of animals were used as food, and yet no case of *intoxication* in those that used them has been re-

corded, providing these products were well cooked. Everywhere organs are taken away from the general consumption because of their being tuberculous: they are destroyed, burnt or transformed into manure or other uses. And yet it is frequent for some of them to be sterilized, cooked, and then given to animals for food, and no intoxication seems to have resulted from this; it may even be supposed that the same has happened with human beings, and it must be acknowledged that even in such case no *intoxication* is to be feared.

Professor Galtier has carried out experiments on young pigs and on dogs of various ages and breeds, and in all of them after feeding with *sterilized* tuberculous products of all kinds he has failed to observe any mark or symptom of intoxication whatsoever; he therefore concludes that *the meat of tuberculous animals is not toxic*: that the accidental use of it is not dangerous, so long as it has been sterilized, and that even repeated meals of such nature will not give rise to any indisposition; consequently no accident will be observed, even if some lesions had existed.

This is very well to the scientific point of view; but, then, has there not been too much said and written about the dangers of such consumption?

* * *

VACCINATION AGAINST CANINE DISTEMPER.—At the closing of the session of the Société Centrale for the year 1906, the prize committee announced that the most honorific reward had been given to M. Carré for his investigations on dog distemper. The prize is a gold medal of quite great value and known as the "Mathieu Prize." This was well deserved. I have already made allusion to some of the works of M. Carré; I may mention some others, as they were made known at the Academy of Sciences lately.

In one of these, it was stated that "The virus of dog distemper was so spread in the surrounding atmosphere, through the constant pouring out of virulent secretions from the diseased animals that to realize his experiments, the greatest care

had to be used in keeping his own subjects isolated. The mode of infection which is the most certain and which is by far the most common in natural infection, is by the digestive tract. Whatever is the quantity of injected virus or the mode of infection, there is always a space of two to five days between the introduction of the virus and the appearance of the thermic reaction, which indicates infection. If the animal is very young and the dose sufficiently strong, death will take place in a few days and the only lesion observed will be a pericardial exudation, which is very virulent. If the animal resists the inoculation, the disease will develop then with its classical manifestations. The blood, taken during the febrile stage, is *sterile, but gives the disease*. Very rapidly complications appear on the skin (papules, pustules), on the mucous membranes (virulent coryza), on the serous structures (virulent exudates), on the internal organs (myocarditis, hepatitis), etc. If the exudates remain pure of all kinds of infection and for a sufficient length of time, the other lesions are not alike. The most common of these secondary infections is broncho-pneumonia, which the author has principally studied, and from the lesions of which he has been able to isolate various microbes, some of which have been considered as specific, such as the pasteurella of Lignières, principally, the coccus of Mathis, the bacillus of Perez, etc."

* * *

"It is impossible to claim for any of these microbes a marked specificity in the production of the secondary lesions. Injected into the tissues of a fresh dog, they sometimes show quite a marked virulency. But what differentiates them from the filtering virus is that their absorption by the digestive canal is remarkably supported. These secondary microbes come from the external surroundings; they can be easily isolated from the intestine and from the natural openings of the healthy or of the diseased dogs.

"Dog distemper, then, appears as a disease with a complicated etiology, due to successive infections which have between them a narrow relation. The first, *the only specific one*, is due

to the filtering virus, which, besides its pathogenic power proper, possesses the remarkable property of annihilating almost entirely the phagocytary protection of the animal infected and of allowing the passage of other microbial agents, which create secondary *non-specific* lesions.

"It is sufficient to infect a fresh animal with the pure filtering virus to see appear on him the ordinary complications of the natural infection, and see in the secondary lesions microbes that the experimenter has not introduced in the organism, microbes which vary and create secondary lesions which are *not specific*, but whose presence could have been detected in the intestine and the natural cavities of the animal before the experimental specific infection."

* * *

This communication was followed by another, resuming a series of experiments made on the nasal discharge, on the cutaneous manifestations, on the exudates, on the discharge, on the lesions of pneumonia, on the blood, etc., and in which the following conclusions are presented: "(1) The disease called distemper in dogs is an affection primitively general, eminently contagious on account of the acute coryza, which gives rise to a virulent discharge. Its specific agent belongs to the group of filtering viruses and possesses a special affinity for serous membranes and for the myocardium. It is doubly dangerous for dogs, by its pathogenic power proper and by the state of less resistance in which, once it has disappeared, it leaves the organism, which is then left without defense against the invasion of microbes from other sources and which, though of little danger by themselves, becomes then able to create very serious and often fatal lesions. (2) The dog, when affected, is specially dangerous in the first days of the disease on account of its virulent coryza. If it is contagious afterwards, it is because the virus has soiled its own tegument and the surrounding objects. (3) To be of good efficacy, the vaccination must act on the filtering virus, which alone possesses the specificity, the secondary lesions being under the influence of peculiar nature, yet not de-

terminated, and are due to one or several microbial species, which vary from one diseased animal to another."

Decidedly, a vaccine against distemper is not yet found!!

* * *

A PATHOGNOMONIC SYMPTOM (?) OF RABIES.—Rabies is in some cases quite difficult to diagnosticate, and on that account the following, presented to the Société Centrale by M. Thierry, is worth recording. The symptoms of rabies are obscure, and it is by hazard that this pathognomonic manifestation has been noticed. The observations were made on one male mule, one cow and two steers. The symptom is nothing but an hyperæsthesia of an extreme acuteness at the beginning of the bladder. Called to see a male mule which had colics by retention of urine, and which, unwilling to rise or stand, had shown difficulty in micturating. Exploration by rectum was made, and as the hand was made to press upon the vesical neck, very violent pain was manifested, and the animal, which had been made to stand with great difficulty, suddenly dropped down. A few days after the mule died with rabies.

Some few days after, one cow and two steers belonging to the same owner presented symptoms which were characteristic of dumb or paralytic rabies. On these animals, kept in the standing position, an exploration by rectum was made, and simple pressure upon the origin of the urethra gave also rise to manifestation of great pain. On the second day the cow had complete paralysis. The same hyperæsthesia was also detected by rectal touch in the two steers. The three animals died the same evening.

Is this valuable information? It seems so, if it is taken into consideration that further inquiry revealed the fact that a rabid dog had been destroyed on the premises where the four animals belonged.

At any rate, one will bear in mind that, among the early symptoms of the disease in man, rigidity of the penis is constant. Perhaps there is a certain analogy. It is no doubt worthy of investigation.

TO REVIVE AN APPARENTLY DEAD FŒTUS.—Here is some simple and practical advice which I find in the *Journal of Zoö-techny*: It often happens that, after a long and painful delivery in the cow, the young calf is brought to the world giving no signs of life. It seems as if it was dead, and yet this condition of death is only *apparent*, and if the little fellow is left without care the respiration and the circulation will not return, and real death will be the result. To revive the subject, the *central reflexes* must be stimulated. For some, rhythmic tractions of the tongue will answer. For others, hard flagellations, severely applied, do better, especially if with them energetic frictions are made on the nose with a rough brush or similar instrument. Either of these three modes of treatment may answer, but are not without objection. The tractions of the tongue are tiresome for an operator already tired. The flagellations seem rough and brutal to those who are looking on, so that the frictions on the nose seem certainly the best. But their effects are considerably increased if, instead of resorting to the brushing alone, the mucous membrane of the nasal cavities is directly tickled with a bit of straw, moved about in rotation and rapidly in them. Immediately the calf will take a strong inspiration, and if at that time pressure is made upon the chest, expiration will follow, and little by little respiration and circulation will resume their normal conditions.

This is evidently simple and easy to apply, but perhaps already known to our obstetrician friends in America.

* * *

THE HORSE AND THE AUTOMOBILE.—Who was it that said: Speaking of the horse and automobile, *this will kill that!* Who was it, that announced that the triumph of the latter would mean the death of that noblest conquest of man? What error! Notwithstanding the constantly increasing production of automobiles, the horse still lives, still reigns and triumphs as well as ever.

In the *Chronicle Agricole* of one of my exchanges, I read: "It cannot be repeated too often, that although the industry of

automobiles is always progressing and showing proofs of its increasing activity, always improving, and when the number of automobiles in circulation is always getting larger, and keep on enlarging in enormous proportion, *the value of horses and the number continue to increase also in similar proportion.* And this is not only for one country, but for all. In America, for instance, which is such an excellent market for French draught horses, notwithstanding the fact that automobilism is there in full rage, these facts are made evident by recent statistics. The number of horses in 1900 was only thirteen million animals; in 1905, the figures were raised to seventeen millions, or *an increase of four million head of animals in the space of only five years*; the value of each individual having increased in similar ascending progression. Indeed, fantastic prices have been realized for selected subjects."

Conclusion:—There is no rivalry. The motor has not killed the horse, and the consequence that it may offer will result in stimulating breeders to produce horses that may prove superior in gait, in form, and above all, in speed. Those results are not impossible to reach.

This may serve to console some veterinarians!

* * *

BIBLIOGRAPHY.—A short glance at my bibliographic receipts to close this. Among the communications received, such as the *Quarterly Bulletin of the Chicago Veterinary College*, the ninth report of the New York State Veterinary College, and the eighth semi-annual report of the Cattle Bureau of Massachusetts, I have before me the evidence given by Dr. J. G. Rutherford, of Canada, Veterinary Director-General, before the standing Committee of Agriculture and Colonization. It is an interesting document upon the condition of contagious diseases in the Dominion. I have also the April number of the *Transvaal Agricultural Journal*, where I read in the veterinary section an excellent article on veterinary hygienic principles applicable to stock in South Africa, and also one on black-quarter. These are from the pens of Drs. A. Theiler, C. E. Gray and

Sydney Dodd, M.R.C.V.S. As usual, this number is handsomely illustrated with numerous plates. In the *Archives of Biological Sciences*, published in St. Petersburg by the Imperial Institute of Experimental Medicine of Russia, I must mention one article on the bactericid action of peat-moss upon the bacillus of human pest, by Dr. Schourouppoff, the report of the antirabic vaccination in St. Petersburg by Kraiouchkine, the result of experiments made on the extirpation of the superrenal capsulæ by Krichtopenko, and, again, an article on the pathogenous action of the bacillus of human pest upon certain species of domestic animals. The last received came from Cape Town with the reports of the Veterinary Staff of the Transvaal, from which I extract the following concise paragraph, giving the total number of animals affected with contagious diseases and the number of outbreaks: Anthrax, 15 outbreaks and 3,148 diseased; epizootic lymphangitis, 15 outbreaks and 69 sick; glanders, 109 and 1,092 sick; lung sickness, 187 and 9,990 sick; redwater, 149 and 7,441 sick; equine scabies, 36 and 234 diseased; Sponsziekte, 78 and 2,273 sick; swine fever, 2 with 115 sick, and finally tuberculosis, 3 with only 3 diseased subjects.

A. L.

AN INNOVATION IN VETERINARY JOURNALISM.

We welcome to our desk *The Veterinary Journal*, "an Anglo-American Monthly Review of Veterinary Science;" editors for Great Britain and the Colonies, Col. J. A. Nunn, F. R. C. V. S., F. R. S. E., C. B., D. S. O., C. I. E., Principal Army Veterinary Officer, India; and Frederick Hobday, F. R. C. V. S., F. R. S. E., Sometime Professor in the Royal Veterinary College, London. Editor for the United States of America, W. L. Williams, D. V. D., Professor of Surgery and Obstetrics, New York State Veterinary College, Cornell University, Ithaca, New York.

The number for September while carrying the name of our esteemed collaborator on its title page, does not publish anything from his pen, but we have every reason to believe that

the "American Department" will be occupied in October by a noteworthy contribution upon American veterinary colleges, largely tabular and comparative. We congratulate our English contemporary upon this evidence of enterprise, and upon its good judgment and good fortune in securing so brilliant and conscientious an editor for its essay into the American veterinary field.

There is no sort of question but that the extent and importance of veterinary science in this country should demand more than one literary exponent; two good representative journals would be none too many—if the profession would support them. It may be that there has never been a journal published here that appealed to the profession with sufficient force to bring out their loyal coöperation and adherence. We believe the REVIEW has more nearly approached the ideal in veterinary journalism than any similar publication in the English language. It has been enabled to publish a greater number of pages of original material than were ever gathered together in a single volume in any English-speaking country, and we believe that it has a larger number of readers in all parts of the world than were ever placed upon the subscription books of a magazine published in its tongue. But the REVIEW is not a financial success. True, it can and does pay all of its bills promptly, and there is a little surplus; but if its editors were paid commensurate salaries, if it maintained offices, like most scientific or specialty publications do, or if it departed from the strictest economy, the deficit would be considerable, and the profession would either be forced to have a smaller and less worthy representative, or none at all.

Veterinary journalism appears to be less of a success in England than it is in America. The *Journal*, with its years of popularity under the guidance of the very flower of the profession, is constantly changing its character, appearance and policy in the hope of attracting more patronage; for instance, but a short time ago it published "society proceedings" to the exclusion of "original articles" and "reports of cases," while

under the new *régime* the September *Journal* is rich in "clinical articles," but ignores every association meeting in its dual field. Withal, the present number contains but 64 pages of reading matter, while the REVIEW for the same month has 142 pages, and this large number has been frequently exceeded recently. Will the new move by the *Journal* increase its efficiency? its success? The REVIEW sincerely hopes that it will, whether it believes it or not. It is very certain of one point: Editor Williams will make his department exceedingly interesting and very valuable to the profession, and these features alone should attract a goodly number of American readers. His active brain, facile pen, great energy, splendid courage, and intense love of truth and fair play are attributes which will adorn any editorial page.

We bespeak for our Anglo-American contemporary larger proportions of support and success than have ever been vouchsafed to its journalistic ventures in the past.

VETERINARY AND ALLIED DEGREES.

The English love of abbreviated titles and degrees is proverbial. A true son of the tight little isle never omits to follow his name with all that he is entitled to use. These titles, as a rule, stand for honors achieved through effort and ability, and it is commendable that just pride should be felt by the holder of these marks of merit and distinction. The senior editor of the *Veterinary Journal* (London) has enough of such capital letters to fill an extra line; his British co-editor is a good second, while our own Williams, who has just entered Anglo-American journalism as American editor of that publication, appears to be getting the fever. He has always insisted that the Montreal Veterinary College, from whence he obtained his diploma, did not grant a degree, and declared that the best he was entitled to was "V. S.," which was simply an abbreviation of "Veterinary Surgeon." Imagine our surprise when we found that his name was followed on the title page of the *Journal* for September with the degree of "D. V. D." We know from the recent

controversy in the REVIEW that these symbols do not stand for "Doctor of Veterinary Dentistry." With Williams' talent, and the contagion of his environment, we would not be surprised to see him fill up the line before a great while.

OPENING OF THE SCHOOLS.

The veterinary colleges of the country will throw open their doors this month to receive the classes of 1906-07, and everything points to an increase in attendance of young men seeking to become veterinarians. The schools of New York, with their high entrance requirements, can scarcely hope to do much better than last year; the University of Pennsylvania, in the full flush of its recently acquired wealth, with its projected new buildings and equipment in course of development, will probably experience a considerable increase in attendance; while the colleges of Chicago and Kansas City cannot accommodate a much greater number than were on hand at the last session, as they were already crowded. It being the last session when matriculation at two years can be obtained at Ontario, there may be anticipated a rush to get the shorter period, though one can scarcely see the advantage of the diploma where so many States have closed their doors against men with two-year diplomas. Some of the more recently established schools of the Middle West may be expected to have largely augmented classes, and with such encouragement they will in all probability increase their efficiency. Under such a gratifying condition of progress numerically, let our colleges demand a little more from the entrants in the matter of fundamental qualification, and thus each year lift our standard higher, gradually making the *personnel* of our profession more worthy of the science which it represents.

DR. D. ARTHUR HUGHES contributes to the present number of the REVIEW an article entitled "The Meat Inspection Movement and After," in which he discusses from the standpoint of an expert the factors which led up to the sensational clamor against the packing-houses, with a dissection of the merits of

the charges, together with a scrutiny of the law, showing what has been secured to the country through the opportunity afforded to secure good sanitary laws. As the author made a study of the subject while actually engaged in the work of inspection, his article becomes authoritatively interesting and valuable.

THE first of this month marks the inauguration of another important era in the development of the Bureau of Animal Industry. The new Meat Inspection Bill goes into effect on that date, giving to this country the best protective laws in the world.

IN an operation for appendicitis in a man a few weeks ago, a cherry pit was found in the inflamed appendix; the seed had sprouted and a miniature tree was growing in the cavity. The "daily" which printed the story gave the authority of the attending surgeon that it was the first instance on record where vegetation was known to have flourished in the intestinal canal.

A MONUMENT was recently unveiled in honor of the late Professor Dieckerhoff in the school which was the seat of his great work in behalf of veterinary practice. A number of the friends and admirers of his genius subscribed for a column of red granite supporting a bust of the distinguished veterinarian, and it was placed in the Berlin Veterinary School.

THE "REVIEW" APPRECIATED IN AUSTRALIA.—The following highly appreciated extract from a letter from Dr. Charles Humm, graduate of the Melbourne Veterinary College, dated Warrnambool, State of Victoria, Australia, July 28, 1906, explains itself: "I would like to place on record my appreciation for your publication, the AMERICAN VETERINARY REVIEW, which I receive regularly through my bookseller. I am sure that many others like myself, who are so far from the great centres of veterinary work, must find your paper indispensable if they have any wish to progress and make a success of veterinary practice. In actual practice one finds little time to wade through extensive volumes of veterinary science, and can only consult those on special occasions. Thus the REVIEW supplies a real want, and in short, concise and condensed manner gives the busy man all the latest doings in the veterinary world."

ORIGINAL ARTICLES.

THE AGGLUTINATION METHOD FOR THE DIAGNOSIS
OF GLANDERS.BY VERANUS A. MOORE, WALTER J. TAYLOR AND WARD GILTNER,
ITHACA, N. Y.

Read at the Meeting of the Am. Vet. Med. Association, New Haven, Sept., 1906.

The accurate diagnosis of glanders in obscure cases and in horses that have been exposed but which fail to exhibit symptoms of the disease, is one of the difficult problems in Comparative Medicine. The successive acquisition of definite knowledge of the nature of glanders lesions, of the life history of its specific bacterium and the effect of mallein have each tended to minimize error in diagnosis. The last and apparently most successful method is that based upon the power of the blood serum of an infected animal to agglutinate in high dilutions the infecting bacterium. It is the purpose of this paper to discuss briefly the results that have already been reported from the study of the agglutination of *Bacterium mallei*, in its relation to diagnosis, together with a summary of our findings.

For an intelligent understanding of the phenomenon of agglutination, a brief statement of its history, the properties of agglutinins and the character of agglutination is appended.

In 1889, Charrin and Rogers found that *Pseudomonas pyocyaneus* cultivated in the fluid serum of an animal immunized against that organism, did not produce a diffuse turbidity of the serum such as appears if it is grown in the serum of a non-immunized individual. Instead of being scattered through the culture medium as usual, the organisms were joined in little clumps which settled at the bottom of the tube. Examined microscopically in the immune serum, the *Pseudomonas* were observed to group themselves in clumps instead of swimming about freely. This was the first recognition of the phenomenon of agglutination, but its application to diagnosis was not made until 1896. In the meantime, Metchnikoff in 1891, Issaeff in

1893, Pfeiffer in 1894, and Bordet in 1895, had all observed the same phenomenon in various lines of experimentation. The macroscopic and microscopic reactions, the importance of proper dilutions, quantitative estimation of agglutinative power, its value in differentiation of bacterial species, the determination of a previous attack of the disease and many other details were described by Grüber and Durham in 1896. Widal was the first to show that the agglutinative power of the serum exists not only in artificially immunized animals and in the blood of convalescents, but also during the early period of infection and at the height of the disease. Widal insisted that the reaction was not one of immunity but one of infection, and his contention, at least on the negative side, has been entirely borne out by later investigators. Widal's discovery was generally confirmed.

The application of agglutination in diagnosis has been more or less successfully made in typhoid fever, hog cholera, Asiatic cholera, pneumonia, bubonic plague, tuberculosis, and other infections.

The literature on serum diagnosis as applied to glanders is far from extensive. It appears that M'Fadyean was the first to record any attempt to determine the agglutinative power of glandered serum. We quote from M'Fadyean (*Journal of Comparative Medicine and Therapeutics* for 1896) what we believe to be the foundation of the present method of serum diagnosis of glanders.

"A remarkable example of the useful application to everyday medical practice of what was at first regarded as a discovery interesting only to bacteriologists, is afforded by the so-called sero-diagnosis of typhoid fever, recently introduced by Professor Widal of Paris.

"It has for some years been known that the blood-serum of an animal experimentally rendered immune against a particular disease exerts a peculiar action on the specific bacteria of that disease, the most manifest effect of this action being a grouping of the bacteria into relatively coarse clumps when

they are freely suspended in liquid. Widal discovered that this action is not confined to animals experimentally made immune, or hyper-vaccinated, but is also possessed by the blood of human beings suffering from typhoid fever, as he showed that it might be utilized in the diagnosis of that disease. Grünbaum, Durham and Grüber, and Delepine and Sidebotham have published observations that are confirmatory of Widal's discovery.

"The demonstration of this remarkable property of the blood of typhoid patients immediately suggests that in ordinary bacterial diseases of man and animals the blood may exert a similar effect on the specific microbes, and the purpose of the present note is to put on record some observations which appear to show that the method of sero-diagnosis is applicable to the case of glanders.

"On the 19th of December I collected a few ounces of blood from a horse affected with chronic glanders. The clinical history of the case indicated that the disease had been in existence for several months (nasal discharge, loss of condition, etc.), and the diagnosis of glanders, made by my colleague, Professor Hobday, was verified by a decided reaction to mallein two days before the horse was killed, and by the discovery of typical glanders lesions at the post-mortem examination.

"The blood-serum of this horse when diluted with nine times its volume of sterile bouillon and mixed with an equal volume of bouillon holding in suspension a rich culture of glanders bacilli (three days culture on agar at 37°C.) was found to produce a marked 'clumping' of the bacilli. The reaction was quite distinct after an hour, and at the end of two hours almost the whole of the bacilli had become motionless and collected into large irregular clumps.

"Control observations were made at the same time with blood-serum (diluted to the same extent) from two horses not suspected of being glandered, and since tested by mallein with a negative result. The serum from one of these animals produced no appreciable clumping even after several hours; in the other case a tendency to clumping was observable in some of

the preparations, but it was later in setting in, and never anything like so complete as in the preparations from the glandered horse.

"The observations here referred to were made on hanging-drop preparations viewed under the microscope.

"Should further observations confirm these results, a valuable addition to our methods of diagnosing glanders will have been made. Considering the perfect reliability of the mallein test and the simplicity of its application, it cannot be expected that the method of sero-diagnosis will displace it, for Widal's method must always remain a laboratory test. But the latter has the advantage of being serviceable for diagnosis on the dead subject, and it may be employed as a prompt confirmatory test in those occasional cases in which no glanders lesions, or only lesions of a doubtful character, are discovered at the autopsy of horses that have reacted to mallein."

In 1898, Bourget and Mery examined microscopically the action of the serum on the specific bacteria of two horses affected with acute and one with chronic glanders. The serum of the latter agglutinated at a dilution of about 1-1000. The acute case reacted as high as 1-2000 at room temperature. In repeating the experiments with the serum of non-glandered horses, using normal serum, serum of horses affected with fever and of horses treated with anti-diphtheritic serum, they determined that agglutination was produced under the same conditions at dilutions of 1-50, 1-200 and 300, but never higher. They conclude by saying that these deductions point to a hope that in employing a serum at a dilution of 1-500, one could establish by serum diagnosis whether a horse was glandered or not.

In 1902 Happisch reviewed the work of Pokschischewsky, who sought to ascertain to what extent agglutination appears in the diagnosis of glanders. He used in his experiments dead cultures of *Bacterium mallei* and examined the action of the serum of sixteen sound and eight glandered horses. The method was as follows: 10 cubic centimetres of glycerin bouillon in a test tube were inoculated with *Bacterium mallei*, and

when a considerable cloudiness appeared, after two or three days, the culture was heated in an autoclav for fifteen minutes at 120° C. The blood was drawn from the jugular and the serum diluted and added to the bouillon culture. After the addition, a hanging-drop was prepared from the mixture. In the hanging-drop the agglutination showed itself by the collection of the bacteria in great numbers of small masses in the bouillon. Pokschischewsky concluded that:

The serum of a sound horse agglutinates at a maximum dilution of 1-300 in a bouillon culture.

The serum of glandered horses shows a wider and higher agglutinating power, the reaction being macroscopic at a dilution of 1-500 and microscopic as high as 1-1000. Two horses showed the reaction before and during malleination, and in the latter case the agglutinating power of the blood was doubled. The reaction being microscopic at a dilution of 1-2000.

Arpád found that glanders bacteria were agglutinated with the blood-serum of non-glandered horses in a maximum dilution of 1-350 and of glandered horses at least two to three times as great a dilution. In one case he observed a reaction in a dilution as high as 1-1600.

Fedorowsky undertook the task of demonstrating the agglutination of *Bacterium mallei* from a pathological and differential diagnostic point of view. He made 143 examinations on the action of human blood and that of fifteen different species of animals, all in normal condition. In addition, he tested 118 other specimens of blood from horses affected with glanders and certain other disease, in which agglutination occurred. His conclusions are as follows:

The blood of all animals examined, including guinea-pig, cat, rabbit, dog, sheep, goat, ape, rat, pig, cow, pigeon, hen, duck, goose, and the horse, agglutinated glanders bacteria in greater or smaller masses. The extent of the agglutination varied, in a given dilution, with the susceptibility of the animal to glanders, the higher the dilutions so much greater is the immunity.

Arterial blood agglutinated *Bacterium mallei* somewhat stronger than venous blood. The serous exudates were weaker than venous blood.

The results confirm the assertion of Affanssiews that serum which is kept in the dark at least eleven months does not lose its agglutinating power.

The agglutinating power of serum is lessened by heating to 50°C. and even more by the action of direct and diffuse sunlight.

Filtering through a clay filter does not affect its agglutinating power.

The original agglutinating power increases with glanders intoxication and infection in susceptible as well as glanders-immune animals.

The rising of the agglutinating power during the course of glanders infection, after having reached the maximum sinks rapidly back to the normal.

After the agglutination has been determined the bacteria become weakened in their agglutinable and virulent characters.

The agglutinating power is present not only with the living but with the dead bacteria.

The agglutination of the dead bacteria does not give so sure or as rapid and certain a reaction as the live cultures.

The agglutinating power of the blood remains not only during the infection with glanders but also with some other diseases.

The power of the blood of glandered animals to agglutinate *Bacterium mallei*, exceeds this power in other diseases, to such a degree that the differential diagnostic significance of agglutination in glanders cannot be denied.

Rabieaux tested the blood of nine glandered and eleven non-glandered horses. The serum was collected as pure as possible, diluted in sterile distilled water in proportions of from one to ten to one to five hundred, then mixed in small sterile tubes with an equal volume of a culture of *Bacterium mallei* in peptonized glycerin free bouillon 24-72 hours old. The mixture thus prepared was placed in an incubator 35-37°C.

and examined at intervals under the microscope. In each case control tests were made on normal serum. At this temperature both glandered and non-glandered serum agglutinated but a difference in the rapidity and intensity of the reaction was noted. Little difference was observed in the reaction at dilutions of 1-10 to 1-50. In glandered serum there were fewer motile-like bacteria between the more compact masses and the reaction was observable in from twenty minutes to three hours, while two to six hours was necessary in non-glandered serum. With dilutions of 1-100 to 1-250 the difference was more marked. In eighteen hours the non-glandered serum agglutinated in masses produced in from one to ten hours by the glandered serum. The non-glandered serum may not agglutinate at all. In dilutions above 1-400 non-glandered serum never agglutinated while glandered serum agglutinated at from 1-500 to 1-1500. He placed 1-1000 at the minimum for condemnation. The rapidity varies with the individual. In two cases at a dilution of 1-1000, the result was obtained in from two to three hours, but not completely until after eighteen to thirty-six hours had elapsed. Sometimes forty-eight hours were required but never more than seventy-two. If the subject had an elevated temperature, the reaction occurred in from two to six hours, at a dilution of 1-1500. The whole of the bacteria may be collected in compact masses, or there may be loose clumps of fifteen to twenty organisms. In serum of high agglutinating power the bacteria in multiplying remains in short chains. The phenomenon may be visible to the unaided eye in dilutions of 1-10 or 1-100 and exceptionally in 1-1000 by small clumps collecting and falling to the bottom leaving a clear stratum. When agitated, they do not produce a uniform turbidity as seen in control cultures. This is not permanent in high dilutions. The injection of mallein does not interfere if the serum is taken after the normal temperature returns. At 12-15°C. the phenomenon sets in less rapidly; at 3-5°C. it may be lost, but the low temperature does not destroy the agglutinating power.

Reinecke concluded that the serum from the sound as well as from the sick horse gave rise to agglutination, but in horses not suffering from glanders the agglutination was not observed macroscopically at a dilution over 1-100 and microscopically over 1-300, while in four tests in which the horses were glandered the agglutination was macroscopic at from 1-500 to 1-1000 and microscopic at 1-1500 to 1-2000.

Bonome has more recently conducted some experiments on the variation of the agglutinin and precipitine content of blood during glanders infection. His work, however, has very little direct bearing upon the utilization of agglutination in the diagnosis of this disease.

Schnürer in the Vienna Veterinary College has found the agglutination method to be superior to any other means of diagnosing glanders. His procedure does not differ essentially from that employed by Schütz and Miessner. It is used officially in the diagnosis of glanders in Austria.

Schütz and Miessner, of Berlin, have made an extended investigation of the serum diagnosis for glanders. They have succeeded to such a degree that their method has been adopted officially for the diagnosis of glanders in all suspected cases in the army horses of Prussia. They recommended the use of glanders bacteria that have been killed by heating them for two hours at 60°C. The killed organisms are suspended in a carbolyzed-salt solution. The suspension was made of a light greyish color and distributed in small test tubes, putting 2 c.c. in each. Various quantities of the diluted blood-serum were added to this emulsion and the mixture incubated for 24-30 hours at 37°C.

The results of these experiments demonstrated that while the blood-serum of healthy horses agglutinated the bacteria in dilutions of 1-400 at the highest the serum of glandered horses reacted in dilutions of from 1-1000 to 1-2000. The blood-serum of horses artificially infected with a virulent culture gave a reaction beginning on the fifth to the seventh day after inoculation, the agglutinating power increasing during the following four or five days, remaining at its maximum for about one

month, and after that gradually diminished. This is of practical importance in detecting glanders in a stable where infected horses have been destroyed, the test being made two or three weeks later. Experience led to the belief that a previous malleination had no effect on the agglutinating power of the serum.

The blood of non-glandered but diseased horses reacted occasionally in higher dilutions. Thus they found in cases of pleurisy and pneumonia that a reaction occurred in a dilution of 1-1000 while in other cases it did not occur in dilutions higher than 1-800. In the Pathological Institute in the Veterinary College in Berlin during two years, the blood-serum of 2,209 horses was tested for glanders with the following results:

Of 1,911 horses free from glanders; in

1232	or 64.8	per cent.	the blood-serum agglutinated	1-100 to 1-300
363	" 19	"	"	" 1-400
135	" 7.1	"	"	" 1-500
123	" 6.4	"	"	" 1-600
41	" 2.2	"	"	" 1-800
11	" .5	"	"	" 1-1000

A reaction higher than 1-1000 was not observed in a single case.

Of 298 glandered horses; in

6	or 2	per cent.	the blood-serum agglutinated at	1-400
12	" 4	"	"	" 1-500
44	" 14.8	"	"	" 1-600
47	" 15.8	"	"	" 1-800
75	" 25.2	"	"	" 1-1000
49	" 16.4	"	"	" 1-1500
65	" 21.8	"	"	" 1-2000

A study of their tables shows that the greater percentage of reactions with normal serum has been with very low dilutions, while the greater percentage with glandered serum has reacted in dilutions so high that they were positively diagnostic. Their experience shows that in glandered horses, the agglutinating power of the blood is with the passing of time gradually diminished, while in horses free from glanders the agglutinating power of the blood does not change. Based upon their experi-

ence, they recommend the following method for the eradication of glanders:

Twenty to fifty grammes of blood are taken from the glandered or suspected horse, recording the date and history of the case, and sent to the experiment station.

All horses whose blood agglutinates in dilutions of 1-1000 or higher should be destroyed.

The same way, all horses should be destroyed whose blood agglutinates in dilutions of only 1-500 to 1-800 if they show symptoms of glanders.

All other horses in which the agglutination is 1-500 to 1-800, should be isolated and destroyed, only when justified, by a second test in which the maximum dilution for agglutination is changed; on the other hand, they may be pronounced free from glanders if at the second test it remains unchanged.

After establishing glanders, the blood of horses in the same stable should be tested after three weeks, and this should be repeated until the last two tests show in all horses individually a uniform reaction.

During the past year, we have made a special study of the agglutination method for the diagnosis of glanders. For the greater part, our purpose has been to corroborate the method employed by Schütz and Miessner. The agglutination method, if reliable, has so many advantages, especially in sanitary work, over other methods of diagnosis, that it seemed eminently fitting that it should be thoroughly tested and its advantages and disadvantages determined. In the beginning, we utilized, as others have done, the guinea-pig for testing the action of the infected serum on various cultures of *Bacterium mallei*. After we obtained a suitable culture, we procured the blood of healthy horses, horses suffering from various disorders, and those infected with glanders. Later we applied the test to all suspected cases. The method and the results of our examinations are appended.

Method.

Culture of Bacterim Mallei.—As pointed out by Schütz and

Miessner, all cultures of *Bacterium mallei* do not agglutinate satisfactorily. It was also shown by their work that a suitable culture when obtained is liable, at unexpected intervals, to lose its responsiveness to the agglutinin. This can be forestalled by passing the organism through a guinea-pig at least once in three weeks. The organisms were grown for from 48 to 72 hours on acid glycerin agar (5 per cent. glycerin and with a reaction of + 2.9 to phenol-phthalen). In order to have a suitable culture on hand, sub-cultures should be made daily. A culture more than 72 hours old should not be used.

Test Fluid.—This is prepared by washing the growth from the agar culture by the aid of a sterile wire loop, into distilled water containing .85 per cent. sodium chloride and .5 per cent. carbolic acid crystals. This suspension is then placed in a thermostat at 60°C. for two hours, which kills the bacteria. A temperature higher than 65°C. and lower than 60°C. should be avoided. After heating, the suspension is thoroughly triturated and filtered through sterile cotton. Thorough trituration of the emulsified growth is essential before filtering. The filtrate thus prepared is diluted with the carbolized salt solution until it is of a faintly cloudy appearance. The proper dilution of the filtrate can only be determined by experience. The carbolized salt solution has been found to deteriorate after one week. It gives the best results if kept cool.

Procuring the Serum.—The serum is easily obtained. At least ten cubic centimetres of blood are drawn from the jugular vein, under aseptic precautions, into a small sterile bottle and sent to the laboratory. As soon as the clot forms, the supernatant serum is placed in a centrifuge and all the sediment thrown down, leaving the liquid perfectly clear. One cubic centimetre of the serum is then added to thirty-nine cubic centimetres of a physiological salt solution, which makes a dilution of 1-40. We have found that the serum should be secured as soon as possible after the blood is drawn. If necessary to delay the test, the serum has given the best results if kept at about 10°C. until used. The diluted serum tends to deteriorate if

kept more than 24 to 48 hours. Even during this time it should be held at a low temperature. Serum which has decomposed after being drawn loses its agglutinating power.

Making the Test.

Three* cubic centimetres of the "test fluid" are placed in each of several small test tubes. With a sterile pipette, the diluted serum is added to the tubes of test fluid and thoroughly mixed. In making the different dilutions, the amount of diluted serum to be used is readily ascertained by the following table:

Dilution of serum.	Amount of diluted serum.		Amount of test fluid.	Dilution.
1-40	1.2	C.C.	3 C.C.	1-100
1-40	.6	"	3 "	1-200
1-40	.405	"	3 "	1-300
1-40	.3	"	3 "	1-400
1-40	.24	"	3 "	1-500
1-40	.195	"	3 "	1-600
1-40	.15	"	3 "	1-800
1-40	.12	"	3 "	1-1000
1-40	.105	"	3 "	1-1200
1-40	.09	"	3 "	1-1500
1-40	.06	"	3 "	1-2000
1-40	.03	"	3 "	1-4000
1-40	.015	"	3 "	1-8000

Where dilutions greater than 1-1000 are made, a serum diluted 1-80 may be used to better advantage, unless the pipette employed is very finely graduated. In this case the amount of diluted serum for a certain dilution must be double that indicated in the table.

The mixture thus prepared is placed in an incubator at 37°C. for twenty-four to thirty hours. A temperature higher than 37°C. interferes with the agglutination.

Reaction.—The reaction consists of a layer of the agglutinated bacteria covering the entire convexity at the bottom of the tube. This film-like sediment may become so dense that it

* We have found 3 c.c. a more desirable quantity than 2 c.c. as recommended by Schütz and Miessner.

rolls in at the periphery. The supernatant fluid becomes clear in the lower dilutions, but in the higher ones the clarification may not be complete, showing that all the bacteria have not become agglutinated. This is further evidenced by the fact that the layer is less dense in the higher dilutions. The reaction may begin in six hours, but cannot be considered complete until twenty-four to thirty-six hours have elapsed. If no reaction appears in twenty-four hours it cannot be considered negative as it may occur in from thirty to forty hours after setting. Often, however, a reaction appears in less than twenty-four hours.

After the agglutination is completed, further standing produces no visible changes in the test fluid.

A negative result shows a small, round concentrated spot of sediment in the centre of the convexity at the bottom of the tube, the test fluid remaining apparently unchanged even after several weeks.

In our examinations, we have confined our work very largely to the macroscopic appearances. It is believed, however, that not infrequently helpful information could be obtained by a microscopic examination as well. In testing suspected blood, we have followed the plan of making for each examination, dilutions of 1-200, 1-500, 1-800, 1-1000 and 1-1200. By this method we were able to tell if the culture is reliable by observing the reaction at the dilution of 1-200, as this should agglutinate even with non-glandered serum. If a reaction occurred in the absence of symptoms at 1-800, the case was considered suspicious and retested in from a few days to three weeks later. If a reaction appeared at 1-1000, 1-1200 or higher, the animal was considered glandered.

Thus far, as shown in tables No. 1 and 2, we have not had a reaction with the serum from a non-glandered horse above 1-500. The majority failed to react above 1-400. In all cases where we have had a reaction of 1-1000 or higher, the animal has shown conclusive clinical evidence of glanders, or upon post-mortem examination has exhibited characteristic lesions of

that disease. This corresponds to the findings of Schütz and Miessner.

We have applied this test to the blood-serum of a total of 81 horses. Some of these were in good health, some were suffering from diseases other than glanders, still others, and by far the largest number, were horses believed to be glandered or suspected of having the disease because of certain symptoms, or they appeared to be healthy but had been exposed. A summary of the percentages of the maximum dilutions of the serum at which agglutination occurred is appended:

Of 19 healthy horses; in

3	or 15.8	per cent.	the maximum dilution was	1-200
2	" 10.5	"	" " " " " "	1-300
11	" 57.9	"	" " " " " "	1-400
3	" .8	"	" " " " " "	1-500

Of 12 diseased but not glandered horses; in

1	or 8.3	per cent.	the maximum dilution was	1-200
5	" 41.7	"	" " " " " "	1-300
4	" 33.3	"	" " " " " "	1-400
2	" 16.7	"	" " " " " "	1-500

Of 50 horses suspected of having glanders; in

1	or 2	per cent.	the maximum dilution was	1-3200
1	" 2	"	" " " " " "	1-2800
1	" 2	"	" " " " " "	1-2000
7	" 14	"	" " " " " "	1-1600
14	" 28	"	" " " " " "	1-1500
12	" 24	"	" " " " " "	1-1400
4	" 8	"	" " " " " "	1-1200
1	" 2	"	" " " " " "	1-1000
1	" 2	"	" " " " " "	1-800
8	" 16	"	" " " " " "	1-500 or less.

The dilutions in which agglutination occurred in the serum of each of 68 horses including the three classes of cases are appended:

NUMBER.	1:100	1:200	1:300	1:400	1:500	1:600	1:700	1:800	1:900	1:1000	1:1200
1 . . .	X	X	X	X							
2 . . .	X	X	X	X							
3 . . .	X	X	X	X							
4 . . .	X	X	X	X							
5 . . .	X	X	X	X							
6 . . .	X	X									
7 . . .	X	X									
8 . . .	X	X									
9 . . .	X	X	X								
10 . . .	X	X	X	X							
11 . . .	X	X	X	X	X						
12 . . .	X	X	X	X							
13 . . .	X	X	X	X							
14 . . .	X	X	X								
15 . . .	X	X	X	X							
16 . . .	X	X	X	X							
17 . . .	X	X	X	X	X						
18 . . .	X	X	X	X	X	X					
19 . . .	X	X	X	X							

DISEASE.	I-100	I-200	I-300	I-400	I-500	I-600	I-700
Œdema of Nasal Septum	x	x	x	x			
Acute Skin Eruption	x	x	x	x	x		
Azoturia	x	x	x				
Azoturia	x	x	x				
Azoturia	x	x					
Influenza, Temp. 105.3°	x	x	x				
Pneumonia, Temp. 102.3°	x	x	x	x			
Typhoid Pneumonia, Temp. 106.3°	x	x	x	x	x		
Typhoid Pneumonia, Temp. 103°	x	x	x				
Acute Laminitis.	x	x	x	x			
Acute Influenza, Temp. 106.2°	x	x	x	x			
Distemper	x	x	x				

[illegible]

7	X X X X X X X X X
8	X X X X X X X X X X X
9	X X X X X X X X X X X
10	X X X
11	X X X X X X X X X
12	X X X X X X X X
13	X X X X X X X X X X
14	X X X
15	X X X X X X X X X X X
16	X X X
17	X X X
18	X X X X X X X X X X
19	X X X X X X X X X X
20	X X X X X X X X X X
21	X X
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34	X X X X X X X X X X
35	X X X X X X X X X
36	X X X X X X X X X
37	X X X X X X X X X X

The clinical history of all the cases recorded in table III as reported by the veterinarians who had them in charge shows that in every case in which the agglutination occurred in the maximum dilution of 1-500 or lower did not have glanders, and that every case in which agglutination at dilutions of 1-600 or higher the horse was suffering from some form of glanders.

The delicacy of the method is illustrated in case No. 11. The horse had been exposed but showed at the time the blood was taken no evidence of the disease. Three weeks later it developed numerous typical skin lesions. Again in No. 15 the horse exhibited suspicious symptoms but it was thought by some veterinarians not to be glandered. After the test the horse was condemned as it gave it positive reaction to mallein and on post-mortem found to contain typical glanders lesions.

In two cases not reported in this table the agglutination occurred with a maximum dilution of 1-400 and 1-500 respectively. These we reported as negative; but the veterinarians in charge replied that the horses were glandered and had been destroyed. Unfortunately, they were not examined post-mortem.

It has already been pointed out by others that the agglutinating power of the serum diminishes quite rapidly after the disease becomes established. We have not had an opportunity to test this phase of the reaction.

Recently, Mr. Cassius Way has applied this method to cases in the service of Dr. Berns, of Brooklyn, N. Y. Up to the time of writing he reports 90 animals in which it has been used with very satisfactory results. The application of this method to all the animals suspected of having glanders in the various stages of infection and under all the varied conditions met with in a larger practice will be necessary to determine its limitations.

The application of the serum diagnosis of glanders in state and city sanitary work appears to have many advantages over the methods heretofore employed. The blood can be drawn by any veterinarian from the suspected horse with very little trouble and sent to the laboratory. However, the fact should be kept in mind that the method is a laboratory test. Its requirements are such that it cannot be made in any bacteriological laboratory without sufficient notice and preparation. The necessary solutions must be ready, and cultures of *Bacterium mallei* which possess the agglutinating power must be in stock and of the proper age. To keep these in hand, requires more time, labor and expense than can be given by laboratory men for an occasional diagnosis. The practical work, therefore, will be restricted to boards of health laboratories or those doing the sanitary work for the city or state and perhaps to those of practitioners who have a large practice in stables where cases of glanders are of common occurrence. As in Prussia and Austria, it would seem advisable for each larger city and possibly

state to have at least one laboratory where this work could be done. From these, sterile bottles for collecting the blood and instructions could easily be sent to any veterinarian who wished to have a positive diagnosis made.

Conclusions.

From the results we have obtained in testing the various procedures in the serum diagnosis of glanders as set forth by various investigators and summarized in the preceding pages, the following conclusions seem to be warranted:

1. The diagnosis of glanders by the agglutination method is easier and quite as accurate as mallein. It has this advantage, that it can be used in those cases where there is a rise of temperature and consequently where mallein could not be employed.

2. There appears to be no objections to the recommendations of Schütz and Miessner for the eradication of glanders based on this method of diagnosis.

3. The maximum dilution of normal serum that we have found capable of producing agglutination is 1-500. This is higher than that reported by others. It occurs, however, in but very few cases.

4. The maximum agglutinating dilution of the serum of diseased horses not glandered has not exceeded that of normal serum. This is lower than that recorded by others. We recognize, however, that our experience has been quite limited.

5. The interpretation of the results where the maximum dilution is about 1-500 gives the greatest difficulty. All cases of this kind, unless there are unquestioned diagnostic symptoms or lesions, should be retained for a subsequent test.

6. The method, while simple in its details, requires in its application the closest of attention and constant checking, because of the liability of the culture losing unexpectedly its susceptibility to the agglutinins.

In carrying out our work we have been greatly assisted by Dr. George H. Berns and Dr. E. B. Ackerman, of Brooklyn, N. Y., who have sent us samples of blood whenever requested.

For this most helpful service, we desire to express our appreciation and thanks.

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NORFOLK, VA., has the largest and best equipped horse show building in the country. It is steel framed, 400 feet long, 173 feet wide, with more square feet of floor space than Madison Square Garden. The ring is 285 feet long. On the grounds are a half-mile track, a steeplechase course, and stable accommodations for 300 horses.

Indexed. **PRACTICAL APPLICATION AND RESULTS OF THE
AGGLUTINATION METHOD OF DIAGNOSING
GLANDERS IN ONE HUNDRED AND
FIFTY-TWO CASES.**

BY GEORGE H. BERNES, D. V. S., AND CASSIUS WAY, BROOKLYN, N. Y.

Presented to the 43d Annual Meeting of the American Veterinary Medical Association,
at New Haven, Conn., Aug. 21-24, 1906.

Early this spring I was requested by Dr. V. A. Moore to furnish a number of specimens of blood from horses suffering from a variety of diseases and a few from animals which I knew to be glandered, as he desired to experiment with a new method for diagnosing this disease, and, if possible, pick out the glandered specimens without any knowledge of their source or history.

About twenty specimens of blood were sent during the months of February and March from horses suffering from various diseases, three of which were from well-developed cases of acute glanders. The bottles were labeled with various names or initials and color and sex of patients only. Dr. Moore promptly reported positive reactions in the glandered animals and negative in all the rest. After this the blood of all glandered and suspicious animals coming under our care was sent to Dr. Moore, and I am pleased to say that with one exception his diagnoses were confirmed by clinical symptoms or subsequent developments. The exceptional case was one which had been exposed to the infection for one or two days only, when the blood was drawn. Dr. Moore's report being negative, no further attention was paid to the horse until six months later, when we found him greatly emaciated, temperature 102, submaxillary lymph glands enlarged and lobulated. He was again subjected to the blood test and it promptly agglutinated 1-800.

Through the courtesy and kind assistance of Dr. Moore, I was enabled to fit up a small laboratory at our hospital in Brooklyn, and fortunate enough to secure the services of Mr.

Cassius Way, who has been Dr. Moore's assistant in the department of pathology in the New York State Veterinary College for a number of years, and who is thoroughly familiar with the technique and all details of this method.

During the last two months we have examined 152 specimens of blood from horses showing unmistakable symptoms, from others which were slightly suspicious by reason of persistent elevation of temperature, and other conditions, and from still others which had only been exposed to the infection and showed no symptoms whatever. One hundred and twenty-five samples were obtained from animals in our own practice, and the remaining 27 samples were sent by veterinarians practicing in Brooklyn and vicinity. We obtained the blood by obstructing the jugular vein as for phlebotomy, introducing a hypodermic needle into the distended bloodvessel, and by continuing the pressure upon the vein allow about one ounce of blood to flow into a sterilized bottle. The bottles were labeled numerically, beginning with No. 1, and an accurate record was kept of the clinical history of each case.

Of the 125 samples 19 reacted in the proportion of	1-800
45 " " " " "	1-500
61 " " " " "	1-200

(which is said to be the reaction of normal blood). In some cases the reactions were very prompt and occurred in eight hours after having been placed in the incubator, where other samples required from 24 to 48 hours before agglutination took place. In some cases the reactions were strong and well defined, where other samples, placed under identically the same conditions, reacted but faintly.

Of the 27 samples sent by Drs. Ackerman, Shaw, Smith, Lowe, English, Dixon, W. L. Bell, and others,

20 reacted	1-800
2 "	1-500
5 "	1-200

Of the 19 animals in our own practice reacting 1-800, 11 showed well-marked clinical symptoms of glanders or farcy.

Nine were reported to the Department of Health and destroyed. Two being young and vigorous subjects, and owned by a firm having exceptional facilities, were strictly quarantined in a shed and kept for further observation. The remaining eight reactors, 1-800, were in good condition and did not show any indications of disease except a slight elevation of temperature in three or four cases. These horses were also quarantined and kept for further observations. Of the 45 reactors, 1-500, one developed acute symptoms three weeks later, reacted this time 1-800, and was destroyed. The remaining 44 showing no physical symptoms were isolated as well as possible, properly cared for and continued at their usual work.

All of the horses tested either showed symptoms more or less marked, or they came from stables in which one or more cases had existed.

In all cases the stables were thoroughly disinfected and all possible precautions taken to guard against spreading the disease. The 54 remaining reactors were placed under treatment, each horse receiving 2 dr. of iod. potash mornings and $\frac{1}{2}$ oz. Fowler's solution of arsenic evenings in drinking water, and all were systematically inspected every Sunday morning since the original tests were made. Ten cases all from the same stable have been under observation since June 16, and most of them have been re-tested repeatedly, not only by this new method, but with mallein also, and the results are most interesting.

Among them are Nos. 1 and 3, which are the two horses referred to in the beginning of this report as having shown marked clinical symptoms, and reacting 1-800. After the agglutination test they were malleined, and both promptly reacted to the extent of 3 and $3\frac{3}{5}$ degrees respectively.

One horse had a sticky discharge from one nostril with indurated lymph glands, and the other showed a corded condition of the lymphatics with multiple abscesses on side of face, and a lobulated submaxillary.

Both animals showed a gradual improvement in clinical symptoms, and on July 17th were re-tested and again reacted

to both tests—agglutination 1-800; mallein above 3 degrees.

On August 6th the physical symptoms had almost entirely subsided in both cases, and the same results were obtained with the agglutination test. Six of the eight reactors, 1-800, referred to above, are also from the same stable and were again submitted to both tests on July 17th and August 6th, with same results as in the original test of June 16th. These last six horses are eating well, improving in condition, and, excepting a slight elevation of temperature, are for the time being to all appearances in perfect health.

I regret to say that I am not in a position to report the history and termination of the 27 cases examined for other veterinarians, for most of them have failed to comply with my request for a clinical report. Drs. Ackerman, Shaw, and J. Payne Lowe being the exceptions.

Case No. 51 proved of special interest by reason of the fact that it occurred in a stable of 38 horses, kept in a clean but poorly lighted and ill-ventilated stable. The patient showed no special clinical symptoms, except increased respiratory movements, loss of strength and condition for five or six weeks preceding my visit and a temperature of 102. His blood reacted strongly in eight hours, 1-800. He was sent to the hospital, destroyed, and a post-mortem examination made, which revealed most typical lesions of pulmonary glanders. A portion of this lung was packed in ice, and sent to Dr. Moore, who pronounced it a splendid specimen and promised to make an effort to get cultures from it, but whether he was successful or not I am unable to say. The 37 other animals which had lived in the same stable with the last described case, were subjected to the agglutination test and two reacted at 1-800 and eight at 1-500. The two reacting 1-800 were strictly quarantined; the eight reacting 1-500 were kept by themselves as well as possible, and kept at their usual work. All of them were placed under treatment and they will be systematically examined once a week for some time to come. These cases are included in the original 125 above referred to.

I have only mentioned two stables in this report, as all the other reactors, probably thirty in number, are in smaller stables distributed all over Brooklyn. They are still under our care, receive their medicine, will be regularly examined at one or two weeks' intervals, re-tested when deemed advisable, and, if possible, kept under our observation until they either develop clinical symptoms or cease to react to the test.

While the agglutination test is still in its infancy and our experiments are by no means completed, and our cases not sufficient in number to warrant positive conclusions, I am of the opinion that this method is a most valuable aid in diagnosing glanders, and from the above it would seem that this test not only reveals the presence of infection, but, to a certain extent at least, the degree of infection, by the reaction being either prompt or tardy, strong or weak, and the agglutination taking place in varying proportions from 1-200 up to 1-1200 or even higher.

If it is now, or if it ever becomes an established fact, that by this test, or the mallein test, reactions only take place when an animal is infected with the poison of glanders in a greater or lesser degree, it follows that the poison is eliminated from the system or rendered entirely harmless in many instances, and that there is a possibility at least of some cases making a good recovery under favorable conditions and environments.

IN the Tichenor-Grand Company's new stable at Broadway and 65th Street, New York, not an inch of wood has been used in its construction. Even the window casings and frames are of steel, while the stalls are of truss metal lath and concrete, the first of the kind ever built. No theatre or hotel in the world, it is said, is so thoroughly fireproof as this new home for horses. It will be ready for 300 boarders on the 1st of this month. Not only the horses, but the coachmen and grooms are to have sumptuous quarters, the pleasantest room in the building being the coachman's billiard room on the fifth floor. Lockers and dressing rooms, with shower baths, are features of the equipment. It is to be ten stories high, with riding and sales ring on the roof garden.

THE MEAT INSPECTION MOVEMENT AND AFTER.

BY D. ARTHUR HUGHES, PH. D., D. V. M., CORNELL UNIVERSITY.

Meat inspection is the talk of the day. Never before in the history of federal supervision of American meat food supplies has so much prominence been given to the engaging question are our meats and meat products clean and harmless for human consumption. In an article written for this journal (Vol. XXIX., No. 1, Apr., 1905), entitled "The Value of Meat Inspection to the Public Health," I gave a brief account of the American system of meat inspection, pointing out the dangers of animal disease to the public health, the methods of meeting the danger employed by the government and what protection the federal inspection assures to the people. As that article was widely read and favorably commented upon both in my own profession and in the profession of human medicine—it being reprinted in *The New York and Philadelphia Medical Journal*—I wish to say, before launching into the present subject, that I did not therein pronounce the American system of inspection perfect, nor did I intentionally gloss any of its defects. I gave a simple account of the system as it was. The inspection regulations, based on the law of 1891, which were effective until Aug. 1 last, made use of every part of the limited power allowed by the statute. Those regulations were a credit to the men of the Bureau of Animal Industry who made them and administered them. During the violence of the movement which brought into existence the new law, when everyone was investigation-mad, the Department of Agriculture escaped practically scot-free from serious, vitally hurtful criticism. The reason is obvious—the Department had done sufficiently well all that the Meat Inspection law of 1891 permitted it to do.

Yet as the excitement, now about over, brought into such extraordinary prominence before the public eye the federal veterinary inspector and his burden, there can be nothing lost by a scrutiny of the movement which made so much commotion.

I. THE MOVEMENT WHICH CHANGED THE UNITED STATES
MEAT INSPECTION SYSTEM AS ESTABLISHED UNDER
THE LAW OF 1891.

How the movement was begun—The conditions alleged to have been found in the larger packing houses—What conditions were found—Reasons for the conditions found, defects in the law—The remedy.

Sometimes the origin of a movement, national in its sweep, is veiled in obscurity. This cannot be said of the movement which became fruitful in the laws of June 30, 1906. The origin of the movement for a better meat inspection law can be traced to articles published in the London *Lancet*, Jan. 7, 14, 21 and 28, 1905. Adolphe Smith, the writer of them, was an English sanitary specialist sent to Chicago as a special commissioner by that leading British medical weekly to investigate the conditions in the packing houses. For fourteen years he had reported on sanitary questions for the *Lancet*, during which he had personally visited, studied and written upon all the great abattoirs of Europe. His preparation for the work assigned to him can hardly be honestly questioned, nor the honorableness of the man's purpose. In his report to the *Lancet* he fortified his statements with numerous photographs taken on the spot and reproduced in electrotypes to accompany his articles. For long years he had studied at first hand the central government abattoir of the German capital, the Schlachthof of Berlin, which is faultless, the houses at Hanover, Mannheim, Hamburg, Vienna, Buda-Pesth, Brussels and Paris. That is to say, he was intimately acquainted with the best modern slaughter houses of Europe, and because of this long fourteen years' experience in sanitary work for the foremost medical journal in Great Britain, his statements would be credited as reliable by the British medical fraternity the world over. Accordingly the editors of the *Lancet*, in their "Annus Medicus," or summary of medical events for 1905, published Dec. 30, of that year, in an article "The American Beef Trust and the Chicago Stock Yards," give a *résumé* of Mr. Smith's statements and mince no words in their

scathing denunciation of conditions said to be found in Chicago by the special commissioner.

As items in the medical press which have a popular interest are apt to leak into the lay press, we find, early in 1905, articles in *Success* and in *Leslie's Weekly* guilefully insinuating that the federal inspection service itself was at fault in certain particulars. The movement hurriedly came to a head in the beginning of 1906. In January editorials appeared in *The New York and Philadelphia Medical Journal* answering the accusations made by the *Lancet*. Shortly that hideous book, "The Jungle," by Upton Sinclair, came from press. J. Ogden Armour answered his enemies in *The Saturday Evening Post* and was, in part, replied to by Sinclair in his malevolent article in *Everybody's Magazine*, "The Condemned Meat Industry." *The World's Work*, pretending not to circulate "Literature of Exposure," nevertheless printed the malicious article by Dr. Jacques, represented to be "A Picture of Meat Inspection," besides a gratuitous article by a lawyer, "The Failure of Government Inspection." By this time, May, 1906, the movement had reached fever heat and the daily press was full of articles on the meat question; for the scientific commission, Drs. Mohler, Steddom and Hauk, sent to Chicago by President Roosevelt to investigate statements on conditions there made in the *Lancet* and elsewhere, had made its report and had been followed by a popular commission, Messrs. Neill and Reynolds, who were to give "the average judgment of the average mind" on the Chicago packing houses. Though the report of the scientific commission, as appeared in the examination of Commissioners Neill and Reynolds before the Agricultural Committee of Congress, corroborated their main points, the text of the report of the scientists was never printed. However, the conditions described in the Neill-Reynolds report, whether rightfully or wrongfully, were enough to pitch the popular animus, against conditions described, to fury. The agitation, whether it had basis in fact or not, begun by the *Lancet* Jan., 1904, and reaching its highest pitch after the publication of the Neill-

Reynolds report, June 5, 1906, found fruitage in the new Meat Inspection law of June 30, 1906, and the Pure Food law of the same date.

First of all, the movement consisted in a scientific propaganda started by the *Lancet* on statements having some basis in fact. Later it was a popular propaganda in which the public mind was embroiled by gross exaggeration about conditions in the Chicago packing houses, or by sentimentality expressed by those unfamiliar with the difficulties of the slaughtering industry, or by the malice of socialistic reformers who could see nothing right in a rich man or his business, or by misinformation from the misguided who dished up according to the popular demand—given out by all sorts of individuals either in book form, magazine or newspaper articles.

When we inquire about the conditions alleged to have been found in the larger packing houses, and turn to the special commissioner sent to investigate conditions by the *Lancet*, we see that he is possessed too much with the spirit of the agitator who has "found" something, and too little with the spirit of the scientist who takes time to get correct notions on his subject. A large discount must be made for some of his opinions. His study for many years of the state or city owned European abattoirs, in most respects ideal from a sanitary standpoint, gave him a partiality for municipal inspection. He did not take sufficient time to study just what the function of the municipal and federal inspectors respectively was in Chicago. He compounds the two, belittles the federal work as it was and makes misstatements about it which even a cursory study of the Reports of the Bureau of Animal Industry would have corrected for him. Whether we like it or not, the packing trade has been taken hold of by great companies, and will continue to be held by them. It is useless for foreign sanitary experts to advise us to correct conditions by setting up ideal municipal inspection such as they found in Europe. They do not know what we mean by "interstate trade" and the power of the federal government to control it. They did not see that the only way to

secure uniformity in sanitary conditions both in the Chicago houses and in the houses outside that centre was by strict federal legislation. Both the editors of the *Lancet* and their special commissioner had an unnecessary hatred of the Beef "Trust," and gave us, gratis, advice how to remedy unsanitary conditions in Chicago, which was unsuited to America.

But to pass from the comparative truthfulness of Adolphe Smith's statements to those of Upton Sinclair, gives us the sensation which Satan must have had when he fell from the battlements of Heaven, so graphically described by the poet Milton. Great credit must be given the American people for their willingness to wade through the revolting pages of Upton Sinclair. For reckless disregard for truth; for a form of inanity, which, by its socialistic extravagance, would blind the world to the true idea of a great business; for a story aiming only to fulminate unknowing ones against the manner in which an important industry is conducted, one must turn to "The Jungle." Few so-called realists outside of France or Russia would dare to flaunt on their pages the sickening details and the vulgar description here cast before us. If this is art, we want no more of it. Like Macbeth's physic, we would "cast it to the dogs." It takes brazen effrontery to nauseate us with hateful and disgusting pictures in no way appealing to the sense of beauty nor nobility. If the story were saturated with truth the writing of the work would be pardonable; as everyone who has spent much time in the great abattoirs knows, it is replete with godless exaggeration, the story becomes utterly condemnable.

As a socialist of the school of Karl Marx, if there is one thing more than another which inflames Sinclair's ire it is capital and its owner. Hence the defamation, libel and attempt to arouse class hatred instanced in his abuse of Armour and the Armour interests. It is the purpose of Sinclair to defame the character of Armour, the great capitalist, whom he pillories under the name of "Durham," because he is a capitalist and the Armour capital in the packing interests is an object of horror to him. That a man of Armour's business ability should initi-

ate and organize such a stupendous mass of powerful interests calls not for praise from him but hate. Everything and everybody that Armour touches becomes to Sinclair an object of hatred. Packers are to be hated. Everything they do or attempt to do is to be held up to scorn and derision. United States Government inspectors are in the packing houses. That is enough for Sinclair. To him their duteousness must be only a blind. Covertly they must be working wholly for the interests of the capitalists.

Nevertheless "The Jungle" had its place in the history of the movement leading to the Meat Inspection law of June 30, 1906. It was read widely and believed in, either in whole or in part, by many, and consequently its bad blood, its hatred and malice, its wholesale exaggeration, entered into the effect which found finality in the new law. More than any one piece of writing it was referred to again and again. Many people did not believe the indictments that it made, yet their passions were aroused by the horrors which were said to exist. It fomented feelings of disgust. Already the *Lancet* had made a few statements somewhat similar, only far milder, which became quoted in the medical press and leaked into the secular press. That helped "The Jungle." When on top of it all came the work of the U. S. Commissioners and the publication of the Neill-Reynolds report, people did not stop to be judicially minded in such a situation. That there was any truth at all in the statements that had been afloat about the packing houses, lashed popular fury to frenzy. This it was which forced through the new Meat Inspection law in less than a month.

The wrath of these lucky producers of excitement, Sinclair and his ilk, fell heavily primarily upon the packers; secondarily upon the meat inspection service. The packers, to him, are monsters; the government inspectors "the laziest, most dishonest, slipshod, careless and indifferent of all the people in the whole packing house." To speak of all the injustice done to the packers in "The Jungle" would take us too far afield.

However, to take one specific instance, when unsanitary conditions are mentioned nothing is ever said in the packers' favor. There has never been any sanitary supervision of the abattoirs by the government, no requirements to speak of federal or municipal, no general agreement nor complete understanding on this question at any time. The owners have followed their own judgment in the matter. During the recent agitation people have been led to believe that every single process of the preparation of meats was done under conditions "of wildest anarchy," whereas the fact is, though there were no doubt many specific instances of unsanitary acts by individual employes, though at times and in places there was uncleanness and disorder, nevertheless the great American packing companies have all had a set policy forbidding uncleanness. The owners, superintendents and foremen have fought against filth and dirt. Year by year larger and larger sums have been spent in improvements looking to more cleanliness, and a man can say, without the tinge of a blush on his face, that many of the processes are as near perfect from a sanitary standpoint as commercial meat preparatory processes ever can be. Everyone knows that attractiveness of appearance of goods, excellent taste and quality are points always to be borne in mind in the preparation of foods for sale. In all their processes the packers have kept this in mind in no small measure. The federal government has had nothing to do with this; nevertheless, the government inspectors in the work assigned to them under the regulations, far from being lazy, slipshod and dishonest, have performed their duties, within the limitations allowed by the old law, in the strictest manner consonant with their orders. The charges made by Upton Sinclair and the scolding Dr. Jacques against the federal inspection have no foundation in fact. How little Sinclair knew about the inspectors (except by hearsay, and how much can a man rely upon hearsay) is seen in his reiterated statement in his book and articles that the government inspectors wear blue uniforms with brass buttons. That tell-tale error has been a source of amusement to

federal veterinary inspectors everywhere in the land. Within the limits allowed by the law of 1891 the federal veterinary inspectors have always fulfilled their trust.

In the attacks made on the packing houses and the federal work, whenever that was touched upon by writers with pens dipped in gall, like Sinclair and Jacques, it is to be noted that their only aim is scurrility. If they were talking about the packing houses they had nothing but evil to say of them; if they perchance touched upon the federal work, they had nothing to say of the immense amount of good it was doing, of the large share of protection it afforded to the public health, of the numerous commendable points of the system. For instance, Dr. Jacques, in his paper "A Picture of Meat Inspection," for his own self-glorification, conveys the impression by figures presented that if it were not for the municipal inspection in Chicago the hundreds of thousands of pounds of meat condemned by the federal inspectors would never have been tanked. Whereas he must have known when he made that statement that whenever a municipality, where there is federal inspection, does not tank meats condemned by federal inspectors the latter do it in the strictest manner themselves. This is a striking instance of Dr. Jacques' malice, in which he is second only to Upton Sinclair. Thus these attacks on the conditions in the packing houses or the federal work therein were mainly a pot-pourri of confusion due to ignorance and malicious intention to bring about effect regardless of truth.

What faulty conditions, we may now ask, were found? At this late date there is no need to deny that some of the criticisms of the houses had foundation in fact. There could never have been any chance for the movement to have effectiveness in legislation if there were no truth in the Neill-Reynolds report. There would be no need to rear such a system of regulations as will go into force Oct. 1 next to do away with grossly unsanitary conditions or prevent their reoccurrence, if there never had existed the conditions they are meant to forbid. Just as every veterinarian inspecting animals for the Govern-

ment knows the movement produced the most sickening exaggeration, so also he knows in his own mind that there was some show of reason for criticism. What were these unsanitary conditions which needed to be reformed?

Whether the facts were brought out by Messrs. Neill and Reynolds, or by Drs. Mohler, Steddom and Hauk, does not matter. The question is, was there any truth in the report made public? The statements made by the *Lancet* were much the same as those made in the Neill Reynolds report. The facts are, there were certain unsanitary conditions in very many of the abattoirs throughout the country, doing an interstate and foreign trade, which needed to be righted—in the direction of cleanliness, light and ventilation; there were abuses in the canning industry which should be done away with, as well as faults in preparatory processes or parts of processes which might be bettered; there were, as is to be expected among ignorant foreign employés, and particularly in the more or less necessarily uncleanly conditions of a slaughter house, unsanitary appearance of the workers and numerous instances of filthy acts which would bear supervision and control.

We may give as reasons for these things that in part they were due to the immense growth of the trade. The rush of work and inability to keep pace with the demand upon the departments of the houses left less time for that care for the condition of the houses which would be given otherwise. Many of the abattoirs were built piecemeal, usually in a hurry, to keep pace with the trade. This, however, does not explain away the existing evils: it only accounts for them.

That such conditions existed at all was due to omissions in the fundamental law which founded the Inspection Division of the Bureau of Animal Industry in 1891. In the first place, under the law, the federal inspection had to stop with examination of carcasses on the killing beds. There was no prerogative calling for inspection during the processes of the preparation of meat food products granted. In the second place, no power was given to require sanitary conditions in the abattoirs

nor to require personal cleanliness in the employés. In the third place, as there was no federal Pure Food law, there was no power given the federal inspectors to prevent misbranding nor to prevent adulteration, so they had no right to say what should go into cans, nor prevent deceit in labelling tins or other receptacles. In the fourth place, the law of 1891 was defective in that the inspection service was dependent for existence on the *annual* appropriation of Congress. There was no *permanent* fund to defray the expenses. The fund was always too small to meet the rapid growth of trade. Of recent years the appropriation had been gradually declining rather than increasing. Just at the time when the Bureau was getting calls for inspectors in numerous small houses wishing to do an export trade, none could be given them because of deficiency of the appropriation, which last year was just about \$800,000 for the fiscal year. At this time there came a crisis in the affairs of the Inspection Division of the Bureau. Instead of advancing by placing inspectors in new centres the force had to be cut down and inspectors withdrawn from older official stations. In the fifth place, the chief protection given under the old law was to foreign people rather than to our own people. There was no power granted to compel animals and meats to be inspected for interstate trade, whereas animals and meats for foreign trade had to be inspected. As a matter of fact, because of deficiency of appropriation, even the privilege of inspection was not granted for much meat going into interstate traffic.

If there were defects in the law of 1891 was there need of a remedy, what form should it take, how should it be carried through?

Though it be granted that the vast majority of the animals that come from the corn belt or the Texas plains are thoroughly healthy—a fact which has been constantly borne out in the statements of Secretary Wilson, of statements appearing in such magazines as *The Breeder's Gazette* and corroborated in the reports of the Bureau of Animal Industry—and borne out to my own satisfaction in my own experience in the inspection

of hundreds of thousands of animals from those regions, hardly one or two per cent. having anything at all the matter with them. Though it be true that Upton Sinclair's statements were found by the federal Commission 95 per cent. false. Though it be true that by the lay federal Commissioners and by numerous reporters for the newspapers the world was made to harshly judge the packing house conditions and often, we will say, mistook an occasional and sporadic incident noticed in the houses as the usual way the processes were conducted. Though the fact was overlooked that great sums of money had always been spent and were, during the agitation, being spent for the purpose of cleanliness in the houses. In spite of all this the fact remains, the processes from the cutting of the carcass up to the time of barreling and boxing were not under federal supervision; that the federal government had been given no authority to look after the sanitary condition of the abattoirs, of the way the work was conducted, nor the personal cleanliness of the employés; that the federal officials could not put so much as a little finger on millions of tons of meats going into the interstate trade from small houses. The Bureau of Animal Industry lacked sufficient money and sufficient power. The government inspection of animals and carcasses was admirable as far as it went. True! There could be no denial that much was omitted, nor was this unknown to the government officials. Again and again it was spoken of by Dr. Salmon. The inspection was not carried sufficiently far. The sanitary conditions of houses, persons, processes—and this in small and large houses everywhere which did an interstate business—should be under the federal eye. Then American meats and meat food products would be beyond reproach.

The form that the remedy should take, whatever it was to be, should go deep into the root of things; should take cognizance of the limitations of the prerogatives of that part of the Executive branch of the Department of Agriculture, the Bureau of Animal Industry, upon which the new work, if it came, should fall. From the first everybody saw that the only safe-

guard against possible evils must be in strong federal law recognizing all the past rights of the Meat Inspection Division of the Bureau of Animal Industry and extending its prerogatives to cover all the defects in the law of 1891. Nor would an inspection law alone suffice, a concomitant of it must be a Pure Food law to prevent evils in the canning industry. Thus it was necessary to define adulteration, misbranding, and prohibit poisonous or deleterious substances. "Foods are held adulterated if containing any substance reducing or lowering, or injuriously affecting the quality or strength; when any substance has been substituted wholly or in part for the articles; when any valuable constituent has been abstracted; when mixed, colored, powdered, coated or stained to conceal damage or inferiority, or when containing any poisonous or deleterious ingredients have been added." "Misbranding applies to all drugs or article of food, or articles which enter into composition of food, the package or label of which bears any statement, devise or design regarding such articles or the ingredients or substances contained therein, which shall be false or misleading in any particular, or to any food or drug product which is falsely branded as to the state, territory or country in which it is manufactured or produced."

The question how the remedy should have been obtained, how the necessary measures should have been carried through Congress, is an open one. Criticism has been made of the rush with which the measure was pushed through or of the speed with which the movement was carried to an issue. The opinion has been expressed that the harrying tales brought out in the Neill-Reynolds report should never have been published; that a national commission of pathologists and sanitary experts should have been appointed to calmly consider the charges. But sentiment is a large factor in food making and in the sale of foods. The answer to the statement that the houses were no more uncleanly than kitchens of restaurants is that both should be conducted sanitarily. Because kitchens are dirty is no reason why great houses from which comes the bulk of the nation's

meat food should not be uniformly kept in a reasonable sanitary state. The analogy is a false one anyway. The federal government can control the sanitation of centres from which the bulk of meat foods come; the sanitation of a hotel or restaurant is a local matter perhaps chiefly controllable by boycott. The national legislative body is apt to move slowly anyway—it took seventeen years to get the Pure Food law through Congress. Even though the harrying tales told of the Chicago houses were untrue, and a large part of them were untrue, the facts remain: that there was no law governing the sanitation of buildings, of meat food preparatory processes, nor regarding personal cleanliness, and no government assurance as to the wholesomeness nor fitness of the contents of the can or package for human food. We may say that the criticisms during the movement pointed to all sorts of fantastical ideals in the public mind on the question in what does cleanliness consist—many of them inapplicable to the packing houses. However, the wrath of the people showed that though cleanly ideals were vague in the public mind, they existed, and that a law should be enacted sufficient to crystallize these ideals in the form of practical sanitary regulations for the packing houses, which would satisfy popular demand for wholesome products and cleanly manner of preparation of them. Whatever may be said of the popular clamor, or of the method wherewith the law was put through, it is certain that our sanitary principles, as scientific men, should carry us as far in the demand for a reasonable sanitation, if not farther, than was the popular demand during the heat of the movement for a new inspection law.

II. AFTER THE MOVEMENT: WHAT IT ACCOMPLISHED.

The new Meat Inspection law and the Pure Food law—The regulations based on the law, what they are, their defects—What is now to be expected, overhauling of abattoirs, inspectors in all their departments, greater protection of health.

In speaking of the new Meat Inspection law of June 30,

1906, we may inquire what are the main points in which it differs from the old law of 1891. Conservatism has always been an element in executive federal administration. The belief in 1891 was that the inspection at time of slaughter would very largely protect the public health. This was true enough as disease is easiest detected at that time. The time was not ripe for so complete an inspection as is at present desired. To make a start at inspection of livestock and carcasses was no doubt the plan of the Department. The perfection of a plan to protect the public health against maladies set up by the consumption of improper meats must come gradually when the public had become educated to a knowledge of the dangers therefrom.

The old Meat Inspection law of 1891 concerned itself chiefly with examination of animals before slaughter and after death at the killing beds. As far as definite inspection for disease went, the work was done then, and then only. The prerogatives of the inspectors are now greatly extended. First, the inspection is required of animals and meats for export but, in addition, all animals and meats, except those for sale by retail dealers or butchers, not only may but must be inspected if they are to pass into the interstate trade. This is made not a privilege but an obligation. All houses wheresoever doing an interstate trade must have inspection. Second, the kind of animals and their meats to be inspected are cattle, sheep, swine and *goats*. Though *goats* at the great centres have been inspected since 1891, they were not expressly mentioned in the old law. Third, the inspection covers all animals, carcasses, parts of carcasses, meats and meat food products. This means that there must be an ante-mortem inspection, a post-mortem inspection on the killing beds, a reinspection at the docks when carcasses or their parts are to be placed in refrigerator cars or when meats are to pass into rooms for preparation for foods, an inspection of all stages of the preparation of meats or meat food products. Fourth, the inspection concerns itself with sanitation in the abattoirs and in the pens and adjoining buildings used for animals or the preparation of meat foods. This means that there is no ques-

tion touching the sanitary condition of buildings, the contents of buildings used in preparation of meat foods, the personal appearance of the laborers, which is not under supervision of the federal officers. Fifth, right is given the inspectors to dispose of by tanking all condemned meats. This lifts any doubt as to the authority of the Department of Agriculture to dispose of condemned animals, their carcasses or parts, meats or meat food products. Sixth, the system of labelling, stamping and branding is greatly extended so that government marks, or words required by the government, are placed on every package of meat or meat food product coming from packing houses. All this marking is to be directly under federal supervision.

The federal Pure Food law of June 30, 1906, supplements the new Meat Inspection law and adds much power to the Department of Agriculture not granted by the Beveridge bill. Its provision on misbranding, which I have already quoted, strengthens the hands of the inspectors in their authority over trade labels to be used by the companies on packages of meats or meat food products of any kind. The declarations in that law against false or deceitful labels, which are defined, forbids any hope of misrepresentation of the contents of cans or packages. Besides forbidding dyes, chemicals or preservatives in meat foods deleterious to health the law also reads "food products are declared adulterated if they consist in whole or in part of a filthy, decomposed or putrid animal or vegetable substance or any portion of an animal unfit for food, whether manufactured or not. Or if it is the product of a diseased animal or one that died otherwise than by slaughter." Thus we see that the Pure Food law aids the Meat Inspection law in that it forbids the contents of a can or package to be other than represented to be, while at the same time it shuts out the possibility of the can containing drugs hurtful to human health or that the contents should be in whole or in part composed of forbidden animal substances.

We may now see how the prerogatives granted in these laws are taken advantage of by the Department of Agriculture. In

other words we may exhibit how the rules and regulations recently set forth, Aug. 1, 1906, in Order No. 137, cover every reasonable demand made in the press during the course of the movement for better meat inspection. Besides we may add every weakness in the system of inspection discoverable by experience in the operation of the inspection between 1891-1906 has been made good.

First, the regulations, following the law, provide for the extension of the inspection to every house doing an interstate business. Last autumn the newspapers drew attention to the need of federal inspection in numerous small houses throughout the country, particularly west of the Mississippi. These with all others of the same kind are given inspection under the regulations. The regulations provide for as strict, indeed stricter, inspection for all meat food products to go into the interstate trade as formerly was given for meats for the export trade. Second, the regulation on goats. The business of raising goats is increasing rapidly in this country. It appears in the law that it is illegal to sell these animals, their carcasses or parts except under their proper name. In recent years there has been a large business in goat meat from the great packing centres and the carcasses and parts have been sold as mutton. Goats under the new regulations will be given the same inspection as sheep, but under the Pure Food law their meat cannot be misbranded as mutton. Third, there are some modifications in the ante-mortem inspection. The evil of conniving to make money on animals with a "U. S. Reject" tag in their ear, placed there at time of ante-mortem inspection, is done away with. No animals are now *rejected* in ante-mortem inspection. A "U. S. Suspect" tag is placed in the ear of a suspected animal and it is sold to the companies as suspected. If, on the killing beds, the animal is without blemish the full market price must be paid for it. Fourth, the post-mortem inspection is made much more strict. Animals may be condemned for diseases or noxious conditions not mentioned previously in the regulations. For instance, hogs which have been carelessly al-

lowed to get into a scalding vat alive must be condemned. Not only dead hogs must be condemned, but those in a dying condition. This prevents the sticking of prostrated animals, and claiming, as they were alive, no lesions showing, they are fit for human food. Fifth, the right to reinspect carcasses or parts, passed at the killing beds, at any time, and to condemn if found necessary, is taken full advantage of. Previously when a carcass was once passed that was the end of it. The packer could do whatever he pleased with it. By the new regulation the inspectors may take a carcass, side or quarter in the refrigeration room or loading dock or after it is cut up to go to the sausage or canning room. Furthermore they can reinspect at any time or place deemed fit by the Department.

Sixth, the regulations make ample provision for supervision of all departments where meat is prepared for food—canning, pickling, curing, smoking, cooking, lard preparation and that of oleomargarine, sausage making. That there may be no doubt how far this supervision goes we read "if at any time during the handling of any meat or meat food product, or at any time after the packing or canning of any such product, any portion or package shall be found to be unwholesome, unhealthful or otherwise unfit for human food, such portions or packages shall be condemned and disposed of in the manner described in Regula. 18"—that is, it shall be tagged as condemned, held for tankage and tanked under supervision of a federal employé. Seventh, nothing could be more complete than the regulations on sanitation. They give implicit orders on the cleanly appearance of the buildings in general and rooms in particular; of the trucks, trays and other receptacles for meats, tools and machinery; of the aprons, smocks and other clothing of employés of the companies; of toilet rooms, urinals and dressing rooms; of lighting and ventilation of rooms where food is prepared, with the order that no toilet rooms will be allowed to ventilate into them; of the impossibility of allowing persons afflicted with infectious diseases to be in the abattoirs; that no part of a building may be used for purposes incompatible with

proper sanitation; that butchers must cleanse and disinfect their hands and arms after killing diseased carcasses, together with their tools, and that the killing of animals suspected of disease must be done before or after the regular killing; that carcasses must be prevented from falling on the floor; that plans of new plants or old ones to be renovated must be submitted beforehand to the Secretary of Agriculture. Eighth, careful rules are laid down on condemnation, tanks and tanking of the condemned about which there can be no misunderstanding. Condemned meats are to be placed in a government "condemned room" under official lock, at definite times followed to the tanks by an inspector, the tank sealed at bottom, condemned meats or meat products placed therein after being covered with a coloring matter under the officer's eye, the upper part of the tank also put under government seal, the steam turned on and kept up for twelve hours, finally the seals broken by the inspector. Ninth, an elaborate system of labelling, stamping and branding has been devised. Under the old law the government stamp for passed meats appeared only on boxes, barrels, firkins and the like. Now the government carries its supervision of meats and meat products so far as to keep its eye on every can or package coming out of an abattoir. The stencils to be used by the packers, the brands and other devices for designation of meats are to be first approved by the Department. When in addition to this the Pure Food law empowers the Department with the right to pass upon trade labels before they can be placed on packages of any sort by the packers, that even these cannot be placed upon packages without the supervision of a Department employé, and that the constituents of a food product "shall (not) contain any substance which lessens its wholesomeness, nor any drug, chemical or dye (unless specifically provided for by federal statute) or preservative other than common salt, sugar, wood smoke, vinegar, pure spices, and, pending further inquiry, saltpetre," it looks as if the regulations are nearly perfect.

According to my thinking there is, however, one fault to be

found—due rather to a defect in the Meat Inspection law than to inadvertence in the makers of the Regulations based on the law. The statute reads, an inspection shall be made of cattle, swine, sheep and goats, the carcasses, parts of carcasses and meat food products thereof. During the agitation for a new law it was brought out that cans of boned chicken contained at times anything but chicken, and the question arises why were not fowls and other birds and their meat food products included in the statute? The great packing companies have in recent years been building up an immense business in foods made from turkeys and chickens. Sometimes it has been said, rightly or wrongly we know not, that evils arise from the lack of inspection of birds at the large slaughter houses. Veterinarians know very well how prone chickens are to have avian tuberculosis, asthenia, roup and chicken cholera; how subject turkeys are to entero-hepatitis, geese to goose septicæmia. The iniquities that are possible when these birds are not subject to ante-mortem and post-mortem inspection at the packing houses cannot be overlooked. True the Pure Food law gives the inspectors a supervision of birds and their food products in the canning rooms. It looks as if the time to detect the contagious diseases, at least, which would make birds condemnable would be before slaughter and at time of slaughter.

Certainly during the oncoming and after the passage of such laws as these of June 30, 1906, reforms were likely to come in the appearance of the packing houses. The right is granted the Secretary of Agriculture to require a particular grade of sanitary perfection before full inspection under the new law could be allowed. All abattoirs desiring this inspection, and all were really required to have it, must make application *de novo* for the inspection—as if they had never had any—and agree to live up to the new regulations. The Secretary reserved the right to pass upon old abattoirs before the inspection would be granted, and required that plans for alterations should be submitted to him and that plans for new abattoirs should take the same course. The regulations definitely specify that

they are to go into full force Oct. 1. Time was therefore given the companies to come up in a reasonable manner to the demands of the regulations before the right and privilege of complete inspection would be allowed. The result has been an overhauling of many abattoirs. Many changes went on during the storm and stress of the movement, under the pressure, perhaps, of public revolt. Much is at present being done and more will be done under the full enforcement of the regulations.

An enumeration of the kinds of inspection would be as follows—ante-mortem, post-mortem, microscopic and chemical inspection (for laboratories of the Inspection Division of the Bureau of Animal Industry are being planned for the trade centres), supervision of labelling, stencilling, stamping, branding and car sealing, departmental inspection in the rooms for food preparation, reinspection at any time, sanitary inspection. But a horde of men will be required to do all this work. From whence are they to come? The ante-mortem and post-mortem work will be done by veterinary inspectors, as before; work like the sanitary, chemical and microscopic inspection will at least be under the care of veterinarians. The rest of the work will be under the supervision of professional inspectors. Frequent examinations are being held to obtain eligibles, though there will be an increasing difficulty to obtain men because of unattractive remuneration. In the selection of departmental inspectors to go into the food preparation rooms the government has taken advantage of the fact that there are numerous capable young men who have had many years of experience as inspectors, in the employ of the companies, who could be induced to seek government employment and use their experience for the public good. Hundreds of such men have passed the special Civil Service examination and been stationed in abattoirs, away from the point where they were originally employed, to work under the superintendence of government veterinarians as inspectors in departments where meat food products are made.

We may well rejoice in the institution of the inspection that I have attempted carefully to describe. Yet in simple jus-

tice it should be said that American consumers are marked off by the new legislation into two classes—the unprotected and the protected. For there is a sanitary question involved in the limitation of the federal power to goods which are to pass into the interstate trade.

The unprotected are the people of the country side, the rural villagers, or those in small towns or even cities where meats and meat food supplies are constantly consumed without federal or any other inspection. The nefarious traffic, within state confines, can still go on in diseased, spoiled or uncleanly meat. Where there is no strict municipal inspection there can come in from the environs into the city untold tons of questionable meats for consumption in the cities and towns. The new federal statute makes the provision that the heavy federal hand may fall on any such meats which may pass into minor interstate trade. Even a novice can see though that there is still grave danger in places where the federal statute cannot reach the evil. In such places municipal or state law is imperative.

Thanks to the new statute the number of the protected is vastly increased. Ever and ever there is a tendency to centralization of the beef industry in places and conditions where the full force of the federal law holds good. The bulk of the supply comes from the large companies. The hundreds of small houses doing an interstate business will in time have federal inspection. The former always had had inspection; the latter now will have it. We understand that the federal government proposes to extend its official supervision, under the power granted it in the new law, to the lesser interstate traffic in animal foods along the rivers which make state lines where a good deal of iniquity probably exists. The Bureau of Animal Industry may be depended upon to exercise a strong hand here. In the several ways mentioned the federal inspection will cover a very large share of the meat and meat food supply. Immediately we may expect great results. The protection of the majority of American consumers is now far greater by reason of the superiority of the new inspection and the extent to which it is to be carried.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

A CASE OF OBSTETRICS.

By R. F. HOADLEY, V. S., Yorkville, Ill.

I was called six miles east to attend a Holstein cow that could not deliver her calf. She was down and apparently had not been laboring long. I ruptured the water sacks, and found the foetus alive, but it died during the hour's hard work it took to remove it. Starting from the upper third of the scapula the skin was separated down toward the ensiform cartilage of the sternum and from there in an oblique direction toward the external angle of the ileum. The skin looked as if it had been



cut with a sharp knife—the edge of which had turned slightly white and looked healthy. The hind limbs were bent up over the back and the point of one hock joint was lodged tightly in a fold of skin—so tightly that it could scarcely be dislodged after removal of the foetus. The hind-quarters seemed to be turned almost inside out, exposing all the abdominal viscera

and most of the ribs on one side. The heart and lungs seemed to be normally contained. This case is interesting to me because I cannot understand this *skinning alive process*, as this foetus had not been touched with a knife.

indexed.

MYCOTIC GASTRO-ENTERITIS OF CATTLE.*

By H. E. TRUS, V. S., Lafayette, Indiana.

This condition among cattle in my section last fall assumed almost an epizootic form. When I say that I know of at least 150 cases, I am making a safe estimate. However, some veterinarians have been misled and diagnosed these cases as corn-stalk disease and offer no treatment, when in fact they are very susceptible to treatment. I did not meet with a single case of corn-stalk disease last fall. A history of the last case I was called to see, on Tuesday, Jan. 9, ten miles east of Lafayette, will serve for a description of the condition under which we find these cases. The owner of these cattle, upon going to the yard in the morning, found two steers down and two more reeling around as if they were scarcely able to stand. Telephoned me at 6 o'clock, and I called to see them. The two that were able to stand would walk into the fence or any object without seeing it, fall down, and get up again, as if badly scared; visible mucous membranes congested; one steer in particular stood leaning with his side against a rack, seemingly sound asleep. Arouse him, he would fall, but was able to get up again. I learned from the owner that some nine or ten days before he turned nine of these steers on 30 acres of corn-stalks that had not been pastured, and it was the only field that contained mouldy corn. This piece was planted in April, and a great deal of the corn was mouldy, and in husking the mouldy corn was left in the field.

Pathological Anatomy:—The mucous membrane of the stomach and intestines are infiltrated, tumefied, and dotted with ecchymoses, contents of intestines watery and streaked with blood, lymph glands soft. The lungs, heart, the meninges and the brain are hyperæmic and ecchymosed. Prognosis favorable. Treatment:—Saline purgatives freely, stimulants, alcohol, camphor, and hypodermics, followed by a tonic treatment, restricted diet; after this they commenced to recover.

* Presented at Annual Meeting of Indiana State V. M. A., Jan. 10, 1906.

DISLOCATION OF BOTH PATELLÆ AT SAME TIME.*

By H. E. TITUS, V. S., Lafayette, Indiana.

I have reduced a great many dislocated patellæ, but this was my first experience with a dislocation of both at the same time, and to me it was a very interesting case, because my patient, a two-year-old German coach stallion, was on the main floor of a show barn with some twenty prospective buyers viewing him in this peculiar position, this occurring after he was taken from his stall to enter the ring to be inspected along with others by the buyers.

The history of this case shows that no doubt it was due to the extreme weakened condition the colt was in, as he, just over seven days, and having a very rough voyage and contracting acclimation fever as he landed, placed the patient in such a condition that a dislocation of this nature was much more easy than in most any other class of cases.

Five or six strong men placed a rail under the hind-quarters and carried him to a single stall, where I reduced the dislocation and fastened both limbs ahead and applied a blister, and after five or six days removed my fastenings, and in changing stalls the dislocation again occurred. I had him carried to a box, reduced dislocation, applied another blister, turned him loose and prescribed a tonic.

Colt made a complete recovery with a *slight* enlargement of the joint, which has entirely disappeared.

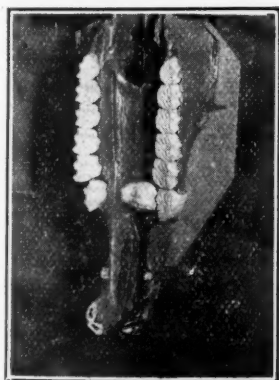
A NEW EXPERIENCE WITH MALLEIN.

Indexed. By W. E. A. WYMAN, M. D. V., V. S., Covington, Ky.

Some time ago the writer was requested to examine a horse having a nasal discharge. Inspection showed a glutinous, hæmorrhagic, non-smelling discharge; nasal and maxillary bone of right side of face bulged some; general appearance of body good; age 11; pulse and temperature normal; teeth normal. Palpation showed submaxillary gland adhering to bone and grape-like in formation. The owner was informed that in all probability a foreign growth in the sinus was present, but that a test for glanders by mallein would be proper and indicated. A male guinea-pig which happened to be on hand got a pocket of nasal discharge. The temperature previous to malleinization ran 99.3; 99.4; 99.2. At ten that night the horse was injected with P., D. & Co.'s mallein. The tem-

*Presented to Annual Meeting of Indiana State V. M. A., Jan. 10, 1906.

perature, taken every two hours from 6 A. M., ran as follows: 6 A. M., 101; 8 A. M., 102; 10 A. M., 102.4; 12 noon, 103.4; 2 P. M., 104; 4 P. M., 104.4* On the strength of this performance the animal was condemned. The post-mortem revealed a malignant growth filling part of the maxillary and frontal sinus. Absolutely no indication of glanders. Internal organs, as lungs, etc., normal, excepting some emphysematous changes on edge of lungs. The guinea-pig, after considerable swelling at the site of inoculation, which subsided, remained well. He was inoculated just eleven weeks ago. Of course this does not shatter my faith in the value of mallein, but after all—How about it?



TWO SPECIMENS FROM AUSTRALIA—
ACTINOMYCOSIS OF THE EYE—
A DENTAL CURIOSITY.

By CHAS. HUMM, G. M. C. V. S., Warrnambool, State of Victoria, Australia.

I enclose two photos. The first is a specimen of actinomycosis, which probably started about the membrana nictitans. Further than this I can give no history.

The second is a dental specimen, which I value highly. I look upon it as a case of atavism—a "hitting back" to the typical mammalian dental formula. In this I would like to call your attention to the presence of a permanent premolar (extra) situated in the bony palate and pressing the first right premolar out of position, and the presence of two extra permanent incisors (the two central and two outer incisors of right side have been removed to show this latter). The animal was about six years old, and I much regret that in this case also I cannot give any history.

* At no time during the mallein test did the horse show any marked depression of the sensorium, nor was the swelling following the injection large or very painful.

BOVINE MONSTROSITY.

By J. HARRISON, V. S., Maple Rapids, Mich.

The calf illustrated herewith is offered as a contribution to the large number of such freaks reported from time to time in the REVIEW. It occurred in my practice a short time ago.

The calf is lying on its back in the picture. Its neck is about six inches long, and the head is turned just half way around or upside down, and grows out from the sternum. The two front legs grow out just above the neck, and lie to one side of the head and neck. The hind legs are also turned half around, and grow out from the



abdomen, the tail being below and between the legs. The tail for four or five inches from its end is denuded of hair from decomposition.

"YOU'RE a great big calf!" cried the huffy girl. "Suppose I am," replied the good-natured youth; "my father was a cowboy."—(*Detroit Free Press.*)

THE TUBERCULOSIS OF PARROTS.—E. Delbano, of Hamburg (*Journal de Médecine de Bordeaux*, June 3, 1906), having made some investigations with a view of elucidating the tuberculosis of parrots, has come to the conclusion that parrots in captivity contract tuberculosis from human tuberculous subjects. He also maintains that the bacilli of avian tuberculosis and of bovine tuberculosis and also of human tuberculosis are merely varieties of a single microbial species, the tubercle bacillus.

THERE are announced two notable additions to horse show exhibitors. Mr. Clarence H. Mackey made his bow to the judges at the show in connection with the New York State Fair at Syracuse last month, and while his stable includes two park four-in-hands (one of English hackneys, the other of American trotters), together with several pairs and single horses, it is announced that he will assemble a large string of high steppers, which will be exhibited at the leading shows. The other recruit is Miss Rockefeller, daughter of Wm. Rockefeller, of Standard Oil fame. She will exhibit under the name of the Rockridge Farm.

SURGICAL ITEMS.

BY DRS. LOUIS A. AND EDWARD MERILLAT, CHICAGO, ILL.

IS THE DEATH RATE FROM ANÆSTHETICS IN DOMESTIC ANIMALS HIGH?

A year ago at the annual meeting of the American Veterinary Medical Association, speaking of the accidents of anæsthesia in animals, it was incidentally mentioned that the death rate is exceptionally high. An English veterinary surgeon, writing for the *Veterinary News* (London), vainly attempting to show the contrary, brands the assertion as an exemplification of discreditable ignorance. The unqualified accusation of ignorance will do no harm; it might even be true, but the claim that anæsthetics are harmless, that there is really no danger in them, and that veterinarians have but few deaths from their administration, is dangerous teaching, requiring the promptest refutation in the interest of those who might be misguided. The truth is that the death rate in animals is high, very high. In England it seems to be exceptionally high, for this critic tells us that *Dollar*, the leading English writer on surgery, *had two deaths in four hundred cases*. This is one death for every two hundred cases anæsthetized, a much higher rate than we American veterinarians have ever admitted. In view of the low death rate in human surgery (less than one in ten thousand), these figures alone prove pretty conclusively that animal anæsthetization has not reached the high degree of perfection that is often claimed by men who have accidentally anæsthetized a few animals without any casualties. Whenever the statistics run into the hundreds, the tell-tale results become evident—that is, the death rate is found to be *painfully high*. Our own statistics show a death rate of about one to eight hundred in horses and about one to three hundred in dogs. This, we admit, is too high, yet it is much lower than our critic's own figures. Handicapped by a dearth of reliable statistics, conservative writers on this subject have always remained non-committal so far as actual figures are concerned. The report of a few hundred cases always shows a high death rate. Reports on thousands of cases are wanting.

The low death rate in human surgery and the high rate in animal surgery points too plainly, too directly, to our inexperi-

ence as anæsthetists. In animal surgery everything is favorable for a low rate. Chronic alcoholism, cachexia, emaciation, general systemic weakness, morbid conditions of the heart, chronic disease of the lungs, serious capital operations of long duration, etc., constitute so many unfavorable conditions seldom ever encountered in veterinary surgical operations. Our operations are nearly all performed upon subjects in fair conditions of health, for local lesions that have not undermined the vital forces. Why then should *we* not be able to anæsthetize 10,000 subjects without a single death? Why are we content to boast that a certain veterinary surgeon has succeeded in anæsthetizing several hundred animals with only a loss of two? If the above presents are not the cause of the high death rate, what is, and if our death rate is not high, what constitutes a "high" rate, pray tell us?

* * *

THE NEW HAVEN CLINIC.

At some future time the readers of the REVIEW will undoubtedly be given a detailed description of this last clinic of the American Veterinary Medical Association. It is only our purpose to mention in a general way that this feature of the New Haven meeting easily paralleled the other features. As compared with past clinics of the Association, it clearly exemplifies an onward trend. From the standpoint of interesting clinical subjects it could hardly have been improved. The facilities for operation and for observation were not as good as those provided at Cleveland in 1905, but, with the exception of the monstrous operating apparatus in the middle of the tent, they were all that could possibly be expected in a temporary out-of-door location. Credit is due the local committee of arrangements for having given their visitors a pretty lively, continuous, variety show, lasting many hours, each succeeding one more interesting than the other. White's work in securing the patients and Jewell's as the anæsthetist will long be remembered by those who recognize skill when they see it.

* * *

A COMMON ERROR IN NOMENCLATURE.

There seems to be a constant inclination to describe the *melanosis of white horses* under the name of *melano-sarcoma*. The name was used freely, and without comment from any one, at the last meeting of the American Veterinary Medical Associ-

ation. Melanotic growths are not sarcomatous, nor do they possess a single feature in common with sarcomas. A sarcoma, quite true, may sometimes be pigmented, like any other tissue, but the pigmented sarcoma (melano-sarcoma) and the deposition of melanin in the skin or other integuments of white horses are two distinct conditions. The melano-sarcoma is very, very rare in horses and they have no special dilection for horses of any particular color. They occur as real tumors stained, here and there or throughout, with a black or bluish pigment. There is no accumulation of melanin *en masse* as seen in the melanic growths of the white horse.

Melanosis of the white horse is strictly a benign condition, entirely compatible with health so long as they do not mechanically obstruct some vital organ. When removed, the wound promptly cicatrizes and there is no recurrence of the growth at the seat of ablation. The traumatic cavity produced by their ablation never fills with cells that fail to mature, as in the case of sarcomas.

The classification of melanosis of the white horse with the malignant growth seems to emanate from the human pathologist, from whom our instruction in pathology was largely received. Our teachers while dealing out what little knowledge of tumors they possessed, always referred to the melano-sarcoma in such a manner as to lead the veterinary student to suppose that white horse melanosis is a similar condition. While their cause is to us unknown, they are no more mysterious than the other tumors are to human pathologists.

* * *

A FEW SUGGESTIONS.

1. *In the treatment of retropharyngeal abscess*, complicating cases of distemper, early evacuation of the contents is advisable. There is always danger of suffocation before the surgeon can reach the patient if operative relief is delayed.

2. *In lancing deep abscesses* only the skin should be divided with a sharp instrument. The underlying structures should be separated with a blunt, probe-pointed instrument to avoid cutting large vessels whose locations are made uncertain by the changed physiognomy of the affected region. Senn always so admonished his students of human surgery.

3. *An abscess cavity is sometimes traversed with cord-like structures* consisting of tissues that have resisted the dissolving influence of abscess formation. Often these cords are blood-

vessels, which are capable of causing a troublesome if not profuse hæmorrhage when broken down with the fingers. Tampering with an abscess that is well evacuated is more liable to do harm than good. Even irrigation with antiseptics is of doubtful value, unless done moderately and unless all of the injected liquid is again drained or bailed out. Strong antiseptics, strong astringents, caustics or curettage will only retard cicatrization, and favor the spread of a new microbial inflammation into the surrounding tissues. A "ripe" abscess is a victory of the body over invading microbes. Meddlesome intervention may turn the victory into defeat.

4. *Abscesses proceeding from injured bone, cartilage or tendon*, or located adjacent to such structures, may continue to discharge after their contents have been evacuated. Under such circumstances surgical removal of the affected tissues is necessary to terminate the process. The fistula of the withers, poll-evil and quittor are examples of such phlegmons.

THE fight is on in Illinois for a graduate to fill the important office of State Veterinarian, so long held by one who has no qualifications for the position. The profession should not leave a stone unturned to drive the present incumbent out of a place that he never should have occupied.

THE "VALUE" OF VETERINARY PRESCRIPTIONS IN STOCK JOURNALS.—The following extract from a letter written by a subscriber to one of the leading live-stock weeklies is fairly illustrative of the value of veterinary prescriptions placed in the hands of laymen: "We have however in two cases been too confident in your replies to veterinary inquiries, the first in taking the afterbirth from a cow that pressed out her womb just after we were through with the operation. After considerable trouble we succeeded in getting it back again, but in a few hours the cow died. The second instance was that of a beautiful and valuable horse which became sweeneyed. In many numbers you have recommended injecting turpentine into the wasted parts with a hypodermic needle. This we did and if your veterinarian had seen the indescribable misery, pain and torture that poor animal was in for about 8 hours he would feel haunted as long as he lives. It makes me sick to think of it. So far the horse is alive yet, but it is the greatest wonder in the world. It was this morning when we treated him, or mistreated him, rightly said."

EXTRACTS FROM EXCHANGES.

GERMAN AND HUNGARIAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Washington, D. C.

IODINE POISONING [*Schuester*].—A bull at N. was affected with actinomycosis of the tongue, and was given the usual iodide of potassium treatment, 10.0 gm. per day. After the lapse of six days, (therefore, after the administration of 60.0 gm. of iodide of potassium), the owner came with the report, that the condition of the patient was more aggravated, the animal being swollen over the entire body, and could rise only with difficulty; also that there was considerable improvement in the mastication of food, and that the tongue had regained almost its normal size. On arrival, the author found the animal lying down, and only after considerable urging could he be induced to stand up. Over its entire body an eczema with marked scaling of the epidermis was noticeable. The hind extremities were greatly œdematous and swollen, deformed; also the scrotum, which hung down a considerable distance. From the eyes and nose a purulent discharge was coming. The appetite was almost entirely suppressed. The administration of iodide was discontinued, and internally frequently sodium subsulphate was given, which had been recently recommended for iodine poisoning; besides flour gruel was frequently given. The eczema was treated with antiseptic zinc ointment. The appetite returned on the following day; however, the eczema resisted the treatment for a longer time, especially at the swelling of the hind extremities and scrotum, where it remained for over three weeks, and then was followed by complete recovery.—(*Jahresber. bayer Thierärzte.*)

PSEUDO-LEUCÆMIA IN A HOG [*Gunther*].—The author observed pseudo-leucæmia in a hog, seven and one-half months old, which in spite of the consumption of large quantities of feed showed no gain in weight. For this reason it was slaughtered. Not possessing a counting apparatus, it was impossible for G. to establish the relation between the white and red corpuscles. In the enlarged liver three leucæmic tumors were found, which were of the size of walnuts, with slight hypertrophy of the portal glands; otherwise all organic and muscular lymph glands were normal, as well as the bone marrow, which

showed no abnormal consistency. The spleen showed marked changes. Its weight was 1925 gm., was 62 cm. long, 16 cm. wide, and 5 cm. thick. Both surfaces were vaulted, the borders thickened, the capsule also considerably thickened. The pulp was of a tough, hard consistence, of a raspberry color; cutting surface smooth; malpighian bodies greatly hyperplastic. —(*Deutsch. Thier. Woch.*, 1906, No. 10.)

THE HISTOLOGICAL DIAGNOSIS OF RABIES [*F. Abba and A. Bormans*].—The authors were engaged in the work of determining the Negri bodies in the brain substance of suspected animals, principally to establish a simple method, which could be carried out by the practicing physician without any particular laboratory. The Ammons-horn is laid free, removed, sliced into small pieces, and kept in 4–5 c.c. of a 10 per cent. solution of osmic acid. Afterwards or necessarily later, the pieces are taken out and washed for half an hour in running water, then placed for three to four hours into absolute alcohol, and cut with a razor. Small cuts are sufficient: if necessary they may be squeezed under the cover glass. The preparate is brownish; the cells are plainly visible, with a pale nucleus, and a stronger stained nucleolus. The Negri bodies lie in the cells near the nucleus, and have a slight resemblance to the nucleolus; and on careful observation one can notice inside of them, bright uniformly located spots, somewhat like vacuoles. The size of these bodies varies, as well as their number. In some cases they may be present in every cell, in others they may be only isolated. In all 93 head of suspected rabid dogs were examined microscopically and experimentally; in 58 cases the results were positive, not only in the microscopic preparates, but also in the test inoculations. The authors state that in 3–4 per cent. of the cases of rabies the Negri bodies could not be found, and they emphasize, *that the negative results of the histological examinations should not be sufficient for a negative diagnosis of rabies*; in these cases test inoculations must be undertaken. The pieces of brain substance from rabid dogs treated with osmic acid proved to be completely changed. In test inoculations the Ammons-horn has not proved to be more virulent than other parts of the brain. The authors conclude that by the method of Volpino, a diagnosis of rabies can be made in less than 24 hours in more than 50 per cent. of the cases. In Turino test inoculations are made only in such cases when the microscopical examination for Negri bodies is negative. The method of Volpino (10 per cent. osmic acid) is preferred to the

more complicated method of Mann; a direct examination of the teased brain substance in diluted acidic acid can only be of aid to a very experienced examiner.—(*An. de. l'Inst. Pasteur*, 1905, No. I.)

FRENCH REVIEW.

By PROF. A. LIAUTARD, M. D., V. M.

VIOLENT TRAUMATISM OF THE FLANK IN A HORSE—DOUBLE COMPLETE LACERATION OF THE SMALL INTESTINE—EXPULSION OF THE RUPTURED PORTION DURING LIFE OF ANIMAL [J. Darras].—This case is peculiar because of its rarity. Called one day late in the evening to see a very old gelding which was reported as having colic, the author found himself in the presence of a subject in the agonies of death. The animal had worked all day, in good trim, said the driver, although he had been brutally thrown down on the right side by another vehicle running into him. Three hours after receiving the blow the horse had shown violent colicky pains, became tympanitic and then suddenly with a violent effort expelled a loop of intestine through the anus. When D. arrived the animal was standing, covered with cold sweat, shaking in his legs, and with an imperceptible pulse. The portion of intestine which had been expelled was the floating colon; it measured three meters in length, and a portion of the mesentery was still attached to it. The horse died after two hours' suffering. At the post-mortem no indication of traumatism was found except a long laceration of the rectum, through which the expulsion of the intestine took place.—(*Record de Médecine Vétérinaire*). [It is strange that no lesion of the intestine was found at the points where the double rupture occurred.—EDITOR].

PARALYSIS OF THE LOWER JAW, NOT OF RABID NATURE, IN THE DOG [M. Dauphin].—Can any unsatisfied heat condition in bitches have nervous reflex influences on the apparition of this trouble? At any rate, the author narrates three cases where paralyzed lower jaws were observed in two bitches a short time after they had been in heat and had not been covered. A pointer, about seven years old, was the first to show it. The jaw was dropping and the saliva was escaping freely. The animal was gay, in good condition and willing, but unable to take milk, water or meat. The sensibility of the lower jaw

was gone; there was no stiffness in the movements. She was placed under observation. Another dog belonging to the same owner, a dachshunde, presented the same symptoms at about the same time. Although the owner feared rabies, and wanted the animals destroyed, D. insisted upon keeping them a few days under observation, as after that length of time general paralysis will show itself if the dogs are affected with dumb rabies. Instead of that, the dachshunde began to improve and gradually got entirely well. The pointer also made a good recovery, but required a longer time. The third case was a bull bitch which did not present nervous symptoms of the jaw, but became entirely blind about the time she would have had pups if she had been covered. This last case recovered in about two weeks.—(*Record de Médecine Vétérinaire.*)

MUSCULAR RUPTURES IN HORSES [*P. Leblanc*].—Results of violent efforts or of traumatisms, they sometimes occur also by simple, localized muscular contractions, as proved by the following case: A horse operated upon for deep punctured wound of the foot is afterwards placed in slings. For a few days he bears them well, but after six days he hangs in them, and it is necessary to let him down. During the night he struggled terribly, made several vain efforts to get up, and when he was raised in the morning with pulleys an enormous swelling was observed on the left croup, extending forward to the sacrum, deforming the whole region, covering the ischium, and passing to the opposite side. The anus was pushed backwards. This swelling was hard, firm, and sub-aponeurotic. No bony projection of the coxo-femoral can be felt. But a large hæmatoma could be felt in the pelvic cavity. At the post-mortem unsuspected lesions were found. There was no fracture nor any articular lesion. The subcutaneous tissue was infiltrated and also the gluteal muscles. The important lesion was on the semi-membranosus and semi-tendinosus muscles, which were almost completely ruptured between the tuberosity of the ischium and the coxo-femoral joint. There was a large hæmatoma, intra- and extra-muscular, which was formed of blackish bloody clots, prune-juice color. The bloodvessels were thrombosed, and the ischiatic nerves were englobed in the bloody tumor.—(*Journal de Zoötechnie.*)

REDUCTION OF THE TORSION OF THE STOMACH IN DOGS [*Prof. Cadeac*].—Nothing is so easy as giving the theoretical rules of an operation that one has not to perform. This is said by the author, who alludes to the indications he has given in

his "Traité de Pathologie Interne," and as evidence records the following case: He receives the information that a splendid St. Bernard bitch is sick since morning. She is lying down, has great dyspnœa, increasing tympanites; no nausea, no vomiting, no defecation. She will probably die during the night. The idea of a torsion of the stomach is suspected; indeed, the enormous tympanites is characteristic. An operation is urgent or death by suffocation will certainly follow in a short time. After shaving and disinfecting the abdominal region, the stomach is immediately punctured and the abdominal wall is incised in the right flank, when a loop of small intestine, ten centimetres long, inflated and congested, bulges out. This is also punctured, and the punctures are repeated here and there on the dilated loops of the organ. The hand is introduced into the abdomen and comes in contact with a pregnant uterus. The posterior face of the liver and the terminal end of the œsophagus are felt for, but cannot be reached. Then moderate tractions are made upon the small intestine, which is then pulled backwards as far as possible. Attempts are made to pull the stomach gently backwards to see the result of the manipulations. Nothing can be made out, and whether they have been beneficial or disastrous cannot be told. It is useless to go further. The animal is considered as lost. However, a bandage and a dressing are applied around the abdominal cavity. The bitch is then carefully carried to her kennel, but as she was very heavy it was at one moment necessary to lay her on the ground, when of a sudden *she arose and jumped over the fence of her kennel*. She was saved, and a few weeks later gave birth to her puppies. Conclusion: "When in the presence of an animal affected with torsion of the stomach, prevent asphyxia with a puncture, open the abdomen as for castration on the right side, pull on the small intestine little by little until reaching the stomach, and so carry the abdominal organs, and the chances to save the patient will be very great."—(*Journal de Zootechnie*). [Why not open the abdomen on the median line?—EDITOR.]

A RATHER INFREQUENT CAUSE OF INTESTINAL OCCLUSION IN CATTLE [*G. Parant*].—Various are the causes of this trouble, but the one found at the post-mortem of this steer has probably been observed for the first time. Sept. 10 he was, after work, taken suddenly with very violent colic. It lasted several hours, and passed away as suddenly as it came. Since that day he remains continuously lying down as if paralyzed,

and refuses all food, solid or liquid. There is no defecation. The pulse is quick and thready. He does not answer to excitement to get up, and remains lying. His legs are not paralyzed. Rectum is empty. Pressure of the right flank made with the hand during rectal exploration reveals a slight soreness. 100 grammes of aloes are prescribed; no result. The animal is slaughtered the next day. At the post-mortem a portion of the small intestine is found much congested. Two intestinal loops, about 50-60 centimetres long, are tied together at their base by a round white cord, stretched in the abdomen and as large as a pencil. This cord makes only one turn around the two strangulated circumvolutions of the intestines, where already slight signs of gangrene are manifest. The cord is inserted at one end in the *cul-de-sac* of the bladder and by the other extremity at the umbilicus. It is the urachus. The bladder, instead of being globular, and round at the anterior part, as it is in the normal condition, has the aspect of that of the foetus, viz., ovoid and fusiform at both ends. When it is opened the canal of the urachus is still open. The animal made water in a normal condition; the umbilicus was well closed, and there was no urinary fistula.—(*Revue Generale de Médecine Vétérinaire.*)

SARCOMA OF THE RIGHT OLFACTORY LOBE IN A DOG [*Marchand, Petit and Coquot*].—A common dog, aged 12 years, has epileptiform attacks since a few days, and its owner wishes him destroyed. Placed under observation, he presents the following symptoms: in a state of stupor, he remains entirely indifferent to all kinds of excitation. His walk is stiff and hesitating. He goes straight in front of him until he meets an obstacle, which he is not cognizant of. He stumbles against it, and remains for an indefinite time completely immobile, in the same position he assumed when he stopped. Often the front legs given away under him. He carries the head always low. In his kennel he puts his nose in the food bowl or under the straw and remains in that position indefinitely. Ocular reflexes still exist. Right eye much retracted in the orbit and turned upwards and inwards. He takes willingly and swallows the meat that is offered him. Skin is cool, with sensibility diminished. There are two cutaneous tumors, one on the poll, the other on the sheath. The diagnosis was reserved. At the post-mortem all the organs of the splanchnic cavities are found healthy with the exception of slight lesions of chronic nephritis and of the mitral valves. On removing the brain it is observed that the right olfactory lobe is very large, deformed, and in-

vaded by a tumor, which is attached to the ethmoid bone so intimately that a chisel is required to remove the ethmoidal volutes with the brain. The left olfactory lobe is sound. The tumor was pressing upon the right lobe. It measured five centimetres in length, three in width, and was localized only on the olfactory lobe. Histological examination of the tumor and of the two cutaneous ones, which had been saved, proved them to be of the same structure—globo-cellular sarcoma.—(*Record de Médecine Vétérinaire.*)

FIBRO-SARCOMAS OF THE EYE-LIDS (HORSE)—PARTIAL REMOVAL—RELAPSE—COMPLETE AND RADICAL CURE WITH JOUANIN OINTMENT * [*L. Dupas*].—In November, 1904, a seven-year-old mare had on the eye-lids of the left eye round, elevated, hard and painless nodosities, which were slightly adherent to the skin. They had been growing there for eight months. Two larger and more important ones were situated on the extremities of the palpebral slit at the nasal angle. They were as large as a hazel-nut, one above the other, and as they interfered with the sight it was decided to remove them. The operation was performed with the animal cast and cocained, the two larger growths and one smaller one being carefully dissected out. The wound left was rather anfractuous, but could be closed with eight stitches. Examined under the microscope, the neoplasms proved to be fibro-sarcomas. To a certain extent they were liable to return. Up to December 3 everything went on well and the animal was discharged. But from this day the cicatrizing process stopped. The granulations returned; they increased, spread and soon were very large. Excision, cauterization even with the red-hot iron—all failed. It was then that the ointment was resorted to. On January 11, a first application was made, and twenty-four hours later there was slight improvement. Two days later the application was made twice a day. In less than three weeks all suppuration had stopped, the granulations were reducing, gradually retracting, diminishing, and at the end of a month's treatment recovery was complete. And not only was the success great on these returned growths, but also on the other smaller tumors; they softened, melted away, and progressively disappeared in such a manner that it was absolutely impossible to suspect they had ever existed.—(*Record de Médecine Vétérinaire.*)

* This Jouanin ointment is made of: honey 240 grammes, subacetate of copper 80, Goulard's extract 40. Mix and heat the honey and copper until the mixture is red brown, add the extract, and keep heating until the mixture has a syrupy consistency.

TOTAL HYSTERECTOMY IN A BITCH—RAPID RECOVERY [*M. Chanier*].—A St. Germain bitch, aged eight years, is dull and refuses her food. She has a painless tumor in the left groin for the past three weeks. It is the size of a child's head. From the vulva escapes grayish, foetid pus; mammae are slightly swollen; a few drops of milk ooze from the teats. The bitch was covered two months and a half ago, and has never shown any signs of pregnancy. A diagnosis of inguinal hernia is made and an operation proposed, viz., opening of the sac and see what the indications may be. This was consented to, and, after all antiseptic precautions, carried out in three steps. First step: Incision of skin, enucleation of sac, opening of the sac, exposure of the uterus in ectopia; it is the seat of suppurative metritis, this condition due to the presence of dead foetuses existing in both horns; total hysterectomy is decided upon. Second step: Ligature with strong catgut of both horns, as near to the ovaries as possible (these being preserved), ligature on the vagina immediately back of the uterine neck, ligature of the arteries, section of the uterine ligament, excision of the mass between the ligatures. Third step: Antiseptic washing of the vagina, free irrigation with boiled water over the wound, silk suture of the skin, wadding dressing and bandage. The operation lasted forty-five minutes. Cocaine only was resorted to. The sequelae were of no special interest. There was but little suppuration at two or three of the stitches nearest to the vulva, but in ten days the dog was almost entirely well. She has been in heat since, her ovaries having kept their ovagenetic function (?) without any inconvenience to herself. Ovaries can therefore be left untouched in hysterectomy, thus avoiding the organic perturbation consequent upon ovariectomy.—(*Revue Generale de Médecine Vétérinaire.*)

THE FISS, DOERR & CARROLL HORSE COMPANY, which is erecting the largest and finest building devoted to the stabling and selling of horses in the world, on 24th Street, New York City, will open as an adjunct to their great business a Horseman's Bank. It is said that the fittings of this bank will be unsurpassed by any similar institution in New York. Mr. Frederick Wagner, President of the company, was founder and former President of the Union Square Bank, and Mr. Joseph D. Carroll is a director of the New Amsterdam National Bank. The new stable is ten stories high, with hospital on the top floor, and with a roof garden for convalescent exercise.

BIBLIOGRAPHY.

A TREATISE ON SURGICAL THERAPEUTICS OF DOMESTIC ANIMALS. By P. J. Cadiot, Prof., and J. Almy, Adjunct in the Veterinary School at Alfort. Translated by A. Liautard, M. D., V. M. New York: Wm. R. Jenkins, 851-853 Sixth Avenue, 1906.

When the *Traité de Thérapeutique Générale Vétérinaire* of Prof. Cadiot was issued some time ago Prof. Liautard felt that such a valuable work should not be lost to the American veterinarians, who, in the main, do not read French. Consequently he secured permission from the author to translate the work, and incidentally to add some American notes, in the hope, not only of rendering the book more acceptable to his readers, but to give credit for many contributions to surgical therapeutics by American surgeons and which have not been preserved in systematic form.

The field of surgical therapeutics has been thoroughly included, and it is probably the best exhibition of the subject in our language. The great pains taken by the translator would have been less open to criticism if he had employed a competent English reviser to smooth off the sentences and reduce some of the French phraseology into well-understood modern English diction, for at several points the reader is confused by the attempt to compel a French word to do duty in a foreign tongue, while in many places there is evidence of a lack of scientific proof-reading. But these little irregularities do not detract from the great value of the treatise as a scientific exposition of the subject, and all Americans must feel pride in the author's display of justice in bringing them forward in company with the surgical achievements of other lands.

The work is comprised in a volume of nearly six hundred large pages, profusely though not elegantly illustrated, there being 118 cuts, well depicting the descriptions, those upon the restraint of animals being very comprehensive. It is divided into three parts, Part I. embracing General Surgery:—Means of restraint of animals, general anæsthesia, local anæsthesia, surgical antisepsis and asepsis, hæmostasis, cauterization-firing; Part II.—Diseases Common to all Tissues:—Inflammation, abscess, gangrene, ulcers, fistula, foreign bodies, traumatic lesions, complications of traumatic lesions, granulations, virulent diseases, tumors; Part III.—Diseases Special to all Tissues and Affections of the Extremities:—Diseases of the skin and cellular tissue, of serous bursæ, of muscles, of tendons, of tendinous

synovial sacs, of aponeurosis, of arteries, of veins, of lymphatics, of nerves, and finally of bones.

To the practitioner it is an authoritative reference work, and can be profitably consulted whenever surgical cases are to be undertaken or where complications arise to perplex the surgeon.

The book can be obtained from the well-known veterinary publishing house of W. R. Jenkins; price, \$4.50. (R. R. B.)

BOOK OF VETERINARY DOSES, THERAPEUTIC TERMS AND PRESCRIPTION WRITING. By Pierre A. Fish, D. Sc., D. V. M., Professor of Veterinary Physiology and Pharmacology, New York State Veterinary College, Cornell University. Second Edition, revised and enlarged. Published by Taylor & Carpenter, Ithaca, N. Y., 1906. Pp. 173, \$1.00.

We congratulate the author on the success which we predicted would follow the publication of this work a year ago so that as early as this there is a call for a second edition, revised and enlarged, now published. Two important improvements have been made in the new edition: the author, so far as veterinary remedies go, has made use of the changes recommended in the latest U. S. Pharmacopœia which became official Sept. 1, 1905; besides, he has recast his chapter on prescription writing and amplified it. The success which the book has met will thus be enhanced. For the adoption of the changes suggested in the National Formulary will make it far more serviceable for our host of practitioners; while the matter on prescription writing can now be more easily assimilated by students of dosage in our growing veterinary schools. The changes make this little pocket book more practical for practical men and simpler—if a book which is simplicity itself, can be so made. (D. A. H.)

AN ADVERTISING VETERINARIAN is organizing a national association of kindred spirits at Washington, D. C. Is it not a sickening and disgusting exhibition of atavism when the *men* of the profession are struggling to discourage such quackism that there can be others found to directly champion it?

"CATTLE FEEDING EXPERIMENTS" is the subject of Bulletin No. 93 of the Nebraska Agricultural Experiment Station, by H. R. Smith. The Experiment Station of Louisiana has issued as Bulletin No. 86, a consideration of "Our Available Stock Foods," by Dr. W. H. Dalrymple, and as is characteristic of this author, it is a thorough and scientific exposition of the subject. The veterinary student will find much information concerning the scientific balancing of nutritive rations in this very practical pamphlet.

CORRESPONDENCE.

DR. WYMAN DISCOURSES ON SOME PRACTICAL TOPICS: PARTURIENT PARESIS—OPERATING TABLES—POWER FLOATS.

COVINGTON, KY., July 1, 1906.

Editors American Veterinary Review:

DEAR SIRs:—Dr. E. A. Van Antwerp's report on irregular parturient paresis ends with a query. A cow either has parturient paresis or she has not. Some years ago the writer, while advocating the injections of a normal saline solution in preference to potassium iodide or oxygen or air, went into details as to what constitutes parturient paresis. To simply touch upon it here briefly. The examination of the discharge about the os uteri is a very important means to settle the prognosis and diagnosis of that disease, giving of course due consideration to other symptoms present. A great deal of interesting and instructive work along this line has been done by De Bruin and other European veterinary scientists; and the gist of their exhaustive studies shows plainly that a number of other diseases closely resembling parturient paresis exist, which are benefited by the udder treatment. The writer long ago has ceased to call a case parturient paresis (at least in my personal records) because an udder injection cured the animal.

Apropos of Dr. Warren's report on quittor. An operating table is all right in its place. Merillat in the May number of the REVIEW hits it beautifully. The writer had an operating table, in fact the first one of its kind in the United States, a table very similar to the one now advertised in the REVIEW. In my work "Catechism of Veterinary Surgery," I dissected that table—perhaps I did use the big stick too freely; to judge by the way my English *confrère* and critic jumped on me, I am inclined to believe that somebody over there got hit by the stone which was thrown and—yelped. The ropes will always be the main means of restraint of the majority of veterinarians, and quittor operations are at certain seasons weekly, and often daily occurrences, the animal being handled with ropes. Colleges ought to have such appliances, as the student should gather positive knowledge at his *alma mater*. I think the manufacturers of the various tables would do well to put their operating tables at the disposition of college authorities; in that way their claims can be substantiated.

Talking about claims, reminds me of several power floats

that are now offered to the profession—two of them the writer has tried and returned, the third is in use now, a Western invention, and so far leads, being really practical. The writer will have more to say in the near future on power floats and the experience he has had with them. W. E. A. WYMAN.

POOR RESULTS FROM THE LATEST OPERATION FOR CHOKE.
EL PASO, TEXAS, September 20th, 1906.

Editors American Veterinary Review:

DEAR SIRs:—Commenting on your note appended to my report of a case of choke showing rupture of the heart on post-mortem examination, I desire to state that the operation which you refer to was performed on two occasions at this hospital with most unsatisfactory results.

The technique was carried out conscientiously and in detail under the customary precautions and in each instance the patient died, apparently from collapse.

With this experience in mind I had no desire to repeat the operation. Respectfully yours,

MARTIN R. STEFFEN, M. D. C.

ARMY VETERINARY DEPARTMENT.

ARMY VETERINARY NOTES.

DR. L. B. HUFF has been transferred from Fort McKinley, Philippine Islands, to St. Joseph, Mo.

DR. CHARLES H. JEWELL, Fort Riley, Kansas, has been transferred from the Cavalry to the Artillery Corps.

DR. OLOF SCHWARZKOPF, writing from Camp Statsenburg, Philippines, under date of July 15, says that both he and Madam S. are enjoying splendid health, but that he is greatly overworked, owing to the resignation of his Junior, Dr. Rapp. He also states that he has collected considerable material for this department, which will be sent in shortly.

A LARGE "BEAN."—Dr. W. O. Kemp, Key West, Fla., has forwarded to the REVIEW a dried concretion taken from the fossa navicularis of a bay horse, 12 years old, which had great difficulty in micturating. The "bean" measured one and a half inches in length, one and a quarter inches in width, and one inch in thickness.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The seventeenth annual meeting of this organization occurred on Sept. 11, 12 and 13, at Buffalo. The first session was called to order at 11 A. M. Sept. 11th, in the assembly room of the Genesee Hotel, by President W. L. Williams, and the room was about half filled with members and guests, there being a few ladies present. After opening the meeting, the President introduced the Acting Mayor of Buffalo, who welcomed the State Association to the city in felicitous words, to which Dr. Roscoe R. Bell responded on behalf of the Association.

President Williams then delivered the annual address as follows :

PRESIDENT WILLIAMS' ADDRESS.

"Fellow-members :

"At our last annual meeting, in conflict with my personal wishes, you saw fit to confer upon me the highest honor within your power. Personally I have long preferred the freedom of the floor to any office within the gift of any veterinary society and that my association activities should be upon the program rather than in administrative work.

"But you have seen fit to have me do otherwise and your action in electing me, a comparatively new member, to the presidency in so old an organization, which includes so many members of high repute in the state and nation, is a mark of esteem for which I wish to express to you my most sincere appreciation and at the same time to assure you that during my incumbency I shall do all in my power for the welfare of the society and profession. I can do little, however, without the hearty support of each of you, a support which you have generously given thus far and upon which I hopefully count for the remainder of my term of office.

"The constitution makes it a part of my duty to submit at this time an annual address upon the state of the profession in New York and to offer such suggestions as I may for its betterment.

"The State Society meets to-day under the most prosperous conditions of recent years. On the whole, the year has been one of success and encouragement to the veterinarian, the membership of the Society has materially increased, and

for the first time in ten years we open a meeting with all financial obligations of the Society fully liquidated and a handsome balance of cash in the treasury.

"The meetings of the Society for a number of years were apparently of so little value to the members who attended that the numbers at the annual meetings became very small. It seemed that the program offered was not of sufficient interest to appeal to the average veterinarian, and under these conditions it was easy for discontent to arise and the members to become indifferent, and when such conditions exist the finances of the Society suffer in the same proportion as the professional spirit.

"The recent growth and vigor of our Society has been due to the excellence of the programs which have been offered, making it worth while for a large number of veterinarians to attend our meetings and become actively identified with our work. Our conventions have even attracted marked attention from beyond the borders of New York, and we have been honored by the attendance of numerous veterinarians of high standing from other states.

"The future of our Society must depend upon a continuance of the spirit which has pervaded our membership during the past six or seven years. Each member needs to consider that the welfare of the Society depends in large measure upon his individual support. There is no man in our Society who cannot add in some way to the value of our program. Each practitioner has cases and experiences which are capable of teaching lessons to the others and a report of these by the weakest member is of value to himself and to the entire Society. A good veterinary meeting consists of an extensive program appealing to personal experience and the avoidance, as far as possible, of other affairs. We are happy to be able to offer to-day as rich a program as has been secured for any meeting in the history of our organization, preëminent among the papers being those of Prof. Law and Dr. Ackerman upon the subject of 'Veterinary Education in the State of New York,' the one an accomplished scholar and educator, the other an equally accomplished private practitioner. Closely allied to the subject of education is the question of illegal veterinary practice in the state.

"Four years ago you directed the President to appoint a committee for the purpose of prosecuting illegal veterinary practitioners, and, our treasury being empty, voluntary contributions were made for the purpose of enabling the committee to carry on its work. Through the liberality of the members a

goodly sum, was contributed and during the three following years this fund was virtually exhausted. Upon my election to the Presidency it seemed to be my duty under the resolutions of the Society to continue this committee, but there was no money with which it could accomplish any work requiring expenditure, and there was apparently no proper way in which to procure funds for the purpose. After due consideration, the President of the State Board of Veterinary Examiners was made chairman of that committee, and the Secretary of the Society, Secretary of it, and the number completed by retaining Dr. Stebbins, who had previously served as a member. This committee will report to you its actions during the year, with such recommendations as may seem to it appropriate. The question of our attitude toward illegal practitioners in the State of New York is an exceedingly complex one. There are so many ways in which one may violate the practice laws of the state, either in letter or in spirit, and there are so many acts which stand upon the border line between legal and illegal practice that before any very definite action can be taken the members of this organization and the legal practitioners of the state should reach some reasonably unanimous conclusion as to what constitutes illegal practice and how far prosecution should be carried. We may divide the alleged violators of the veterinary practice laws in New York into the following classes:

"I. Veterinary graduates ineligible to take the state license examination and practicing in open defiance of the law.

"II. Veterinary graduates of the same educational qualifications as Class I, practicing as 'Manager' or 'Assistant' under the name of a licensed veterinarian but outside his territory or actual supervision and probably paying tribute to the licensed protector.

"III. Veterinary graduates of the same qualifications as Class I, directly employed by licensed practitioners as assistants at a salary and performing all the functions of a qualified veterinarian, including the making of calls and prescribing.

"IV Non-graduates, such as stablemen, employed by licensed veterinarians, sent out to perform the ordinary duties devolving upon veterinarians, making calls, examinations and prescribing.

"V. Veterinary graduates eligible to enter the examinations of the Board, and who have taken them, but enter upon practice before receiving the state license or having official information that they have succeeded in passing.

"VI. Undergraduate students working for a nominal sum during vacation under a practitioner, who introduces them as 'Doctor' to his clients and sends them out to answer general calls and perform the functions of a veterinarian without immediate supervision.

"Class I is generally composed of inferior men who are not generally prosperous, cannot collect accounts by law and are greatly hampered. If pressed they can hunt cover under Class II or III. It is a numerous class, constantly on the increase.

"Class II is not extensive and they are generally under the protection of prosperous and influential practitioners.

"Class III is more extensive. They make good assistants because they cannot leave their employer and start up in legal opposition to him.

"Class V is mostly made up of recent graduates and the practice is quite common with them. Usually they pass the Board test and are licensed within 60 days after taking the examination.

"I do not know how extensive Class VI may be, but it exists to some extent among students.

"I cannot see that one is more an evasion of the law than another. Which of these groups shall we attempt to prosecute? Another question of importance should first be answered.

"What is our motive in prosecuting an illegal practitioner? Two answers may be given.

"I. The protection of the veterinary profession.

"II. The protection of live-stock interests.

"Our attitude in prosecuting will vary according to which of these answers is accepted. There is a general sentiment against class legislation and in favor of affording support, encouragement and protection to valued interests or industries.

"We do not believe that the profession in and for itself has any claim to protection, but that the reason for legislation regarding the veterinary practice must be based primarily upon the question of improving the veterinary service to the live-stock owners. If this be accepted as our answer, then the prosecution of illegal practitioners needs be based upon the betterment of veterinary service. We recognize three chief ways by which this end may be attained.

"I. Increasing the efficiency of existing practitioners.

"II. Supplanting inferior practitioners by veterinarians of a higher order.

"III. Increasing the number of efficient practitioners.

"Legal enactments can exert but little direct influence upon the improvement of existing practitioners; whatever progress they are to make must be chiefly through study in their practice, through veterinary journals or in veterinary societies. We are thus left to consider the enforcement of legal enactments in relation to their power to supplant inferior by more efficient men and by increasing the number of practitioners.

"If we successfully prosecute a man for illegal practice and force him to withdraw, can we fill the vacancy with a better man? Take a concrete example well known to us. A thrifty hamlet of 6,000 or more persons, with a good agricultural community surrounding, has one licensed non-graduate and one unlicensed graduate. The latter is apparently honest, clean, has some competency and apparently renders some service. A successful prosecution of this man would leave the community wholly reliant upon the aged non-graduate who has a license and no available licensed graduate nearer than 12 or 15 miles, with questionable improvement in efficiency. But the distance at which a veterinarian can render efficient service is limited by the value of the animal and the urgency of the case. In many cases a disease will have passed its crisis before the veterinarian 15 miles distant can reach the scene. But in the community to which I refer, a large proportion of the animals do not exceed \$50 per capita in value, and a veterinarian can ill be afforded for attendance unless the value of the patient equals at least \$5 for each mile traveled by the practitioner, so that in case of a \$50 animal a ten mile call would be about the maximum. Rural veterinary service constantly labors under the disadvantage of high cost to the owner and low fees to the practitioner. If a \$50 animal is attended at a distance of ten miles for \$5, the fee represents 10 per cent. of the animal's value for a single call, which is high for the owner and is yet low for the practitioner. These agricultural communities, despite the low value of their live-stock in some cases, need and deserve adequate veterinary service, and we can not well insist upon driving out an efficient practitioner except we can replace him with a competent one.

"In order to answer this question advisedly we must look to the State Veterinary Examining Board and learn what it is doing in supplying the requisite number of licenses; and it in turn is dependent upon the teaching schools.

"During the first nine years of the Board (we have not

included the tenth year because the statistics are not fully available) there were licensed according to the official reports of the University of the State of New York, 124 veterinarians upon examination, eleven of whom had graduated prior to the formation of the Board.

"Of the 124 licensees, 42 are not in practice in the state, 39 having gone into other lines of veterinary work or other pursuits, one of whom died after leaving practice, and three who are in practice have located outside the state. Seventy-two are apparently now in practice in the state, an average of 8 licensees for each year of existence of the Board. The present address and avocation of 10 licensees is undetermined, and if they are all in practice, which is scarcely possible, the average would be raised to $9\frac{1}{10}$ per annum.

"Former Secretary Morris, of this Society, published in 1897 a list of 639 graduate veterinarians licensed and registered to practice in the state.

"If we assume that the active life of a veterinarian be 20 years, then it would be necessary to license 31 veterinarians per annum in order to keep the numbers intact, but instead we have licensed less than 14 per annum and a large proportion of these had no intention of entering practice at the time of taking the examination, and many others abandoned it in less than a year.

"Our basis for estimating the needs may be wrong. The announcement of the New York State Veterinary College for 1906-07 offers a wholly different calculation. It estimates the number of practitioners in the state as 2,000, and the active life of a veterinarian at 30 years, and by this computation gives the required number of licensees at 66 per annum or makes the need more than double our estimate.

"It must be evident, although our statistics are not exact, no difference upon what basis estimates rest, that we are not replacing those veterinarians who are dropping out of the ranks by removal, retirement, and death, wholly with licensed veterinarians, but in order to fully restore the numbers must draw upon unlicensed or illegal men.

"Nor is the prospect for the immediate future any better. More men graduated from the teaching colleges of the state during this than in any prior year of the existence of the Board, but they are not yet definitely settled and the indications are that less than 10 of them will be in practice in the state one year hence. Next year will afford a large class of graduates, but there is no assurance of getting out of the number many more

practitioners for the state, and with this class the teaching colleges reach their zenith for some years to come under the present conditions, and in the following year there will be a severe decline in the licensees. The profession has held up well in its numbers thus far, because at the beginning of our present law young men constituted the great mass of practitioners, and so far as we know only one man licensed by the Board upon examination has thus far died and he had not really entered into practice but took up meat inspection soon after graduation. It should be noted that the New York colleges must furnish the licensees, as is shown by the records of the past nine years. During that time, according to the official reports of the College Department of the University of the State of New York, licenses have been issued upon examination to graduates of the various colleges as follows:

"Total licensees 1897-1905	124
"Graduated prior to 1897	11
<hr/>	
"Graduated during existence of Board	113
"New York State Veterinary College	77
"New York-American (including New York College of Veterinary Surgeons and American Veterinary College)	38
"Montreal V. C. and McGill University	3
"Pennsylvania	2
"Chicago Veterinary College	3

 113

"We thus find that of the veterinarians graduating since 1896 and becoming licensed to practice in New York, 105 come from schools within the state and 8, or less than one per annum, from outside colleges.

"We are consequently placed face to face with the problem of prosecuting illegal veterinary practitioners without being at all able to supply an adequate number of legal veterinarians.

"If that difficulty were safely passed we would next have to deal with the question of what constitutes illegal practice. We would perhaps all agree that our Class I, consisting of graduates unqualified for the license examination and practicing upon their own account, are clearly in conflict with the law and open to prosecution. On the other hand, we would not be so unanimous about Class III, in which a non-licensed man is acting as assistant to a licensed practitioner, occupies the same

office and works under the licentiate at a fixed salary. He goes out to make calls, examines cases, performs surgical operations, prescribes and performs all the offices of a veterinarian, in the name of and for his employer. If this is a violation of the law, who is the violator—the principal, who is licensed, or the assistant, who is not?

"Between Classes I and III there comes Class II, where an unlicensed man maintains a separate office in the name of a licensed principal, perhaps some miles distant. If Class III is legal, what of Class II? If it is legal for an unlicensed assistant to practice while making his office with the principal, we see no objections to his doing the same kind of practice from a separate or second office. Many practitioners have each two or three offices and take calls from each. And if any one of the three classes is legal, then any unlicensed man may find cover therein. There are plenty of licensed non-graduates under whose protection the unlicensed graduate can hide for a nominal sum if that be legal. If these can safely hide under cover of a licensed practitioner as his assistant, then probably the unlicensed groom in the veterinarian's stable, constituting our Class IV, can also be protected from the operation of the law.

"Probably most of you will say that in our Class V, consisting of graduates eligible to take the license examination, or who have taken it but have not yet received a license and proceed to practice, are merely violating the law technically. But if such a man fail in but one subject, not fundamental, and he elects to continue in practice until another examination date gives him a second opportunity, is he then in actual violation of the law? If this is a violation in one case, why not in the other?

"Our Class VI, that of undergraduate students going out with a licensee during the summer vacation, is a very important legal question. Teachers advise students to seize such opportunities, but we all know well enough that in many cases they are sent out on calls, examine patients, prescribe, operate, and not infrequently the licensee introduces the student as 'Doctor', his assistant, and leaves him in charge of the practice during his absence on a vacation. Sometimes he introduces the student as such, but with the remark, 'he can serve you just as well as I,' in which case why should the student continue to take further work in college? If a competent veterinarian, why not graduate and license him without further parley?

"If you agree that the members of each of these classes con-

stitute violators of the law, I believe you would at once admit that a President has a difficult task in finding a prosecuting committee, some member of which is not in some way involved in an infraction of the law, though so far as we know we have succeeded in this respect.

"The serious aspect of the question is that if all these classes are considered as illegal, and I can take no other view, the violators of the law are so numerous that successful prosecution by the Society is virtually impossible, because so many of its members are themselves involved, so few without sin who are in a position to cast the first stone.

"A further very important question which has arisen in reference to the prosecution of illegal practitioners is the apparent inefficiency of the law after conviction.

"One of our earnest local societies undertook some extended investigations with a view to wholesale prosecutions, and upon submitting the law to an able attorney found to their astonishment that while a non-graduate practitioner might be fined \$250 to \$500 and be imprisoned, the illegal graduate practitioner could be fined but \$50, and the collection of this could not be enforced.

"It has been our policy to leave each committee perfectly free to do its work as it saw fit, but under the foregoing conditions, when our advice has been asked by the Prosecuting Committee, we have not urged legal action, but rather a careful study of conditions as they exist and then await your definite instructions. We have thus attempted to present to you openly, frankly, fully, the obstacles before us as we see them in any attempt to enforce the law against illegal veterinary practice. Statistics upon the question are sadly wanting, but two conclusions we believe are safe: 1st. Illegal veterinary practice in the state has been constantly on the increase since 1897, and, 2d, We probably have more illegal practitioners in New York than exist in any other state. In suggesting these conclusions it is to be borne in mind that the illegal practitioners of New York would be largely legal were they located in many other states of the Union. In scanning the commencement reports of outside colleges this year, we noted the names of 17 residents of New York among the graduates, few, if any, of whom could probably have matriculated in a New York school. We have not learned how many of these have returned to the state to enter into practice, but it is quite certain that nearly if not all of those who do so will necessarily violate our practice laws, as

they are not eligible to take the examination of the State Board.

"The important question which presents itself is what course shall we pursue? What is best for the live-stock interests of the state?

"We must look largely to the teaching schools to answer the question through the normal law of supply and demand.

"The next great point to be considered is, which of the classes named by us are to be considered as illegal and stopped by prosecution? In this matter effectiveness depends upon reasonable unanimity, and ere we can have this our members themselves must voluntarily put their own actions above criticism.

"The law, if not sufficiently explicit, and we believe it is not, should be so modified as to render its application practicable. It should especially clearly define what constitutes an infraction and provide an effective method for collecting fines after a conviction.

"The entire subject needs be considered by you carefully and judiciously and a definite plan of action determined upon. For the present it seems to us that one of the most important duties is the securing of statistics showing the number of graduates and non-graduates respectively who were licensed as existing practitioners, how many of these have since died, retired or removed from the state, to what extent these vacancies in the ranks have been filled by new licensees and how many have begun illegal practice in the state. With such data before us we will be enabled to measure the extent of our task. In all our consideration we must not fail to recognize that no law can well be expected to directly favor our profession. If each and every illegal practitioner was successfully prosecuted and placed in jail it would affect the professional or financial standing of but few legal veterinarians. A strong practitioner needs little or no protection by law. Without any legal favors he can have all the practice he can properly do and practice laws become to him a professional sentiment.

"The weak or inefficient practitioner cannot have his practice materially enhanced by any legal enactment. Other practitioners may be excluded, but no live-stock owner can be compelled to submit his diseased animals to an unacceptable practitioner be he ever so legal.

"The protection of the individual practitioner is not in the law but in himself. He needs to see that his work is made better and better each year, he must study each case, he must

counsel with his colleagues, he needs to study constantly and carefully our standard and current literature, attend and participate in our association meetings and bring his practice up to the highest possible plane; then illegal and inefficient men can hurt him but little.

"In spite of the disadvantages recounted above we feel that there is good ground for taking a hopeful if not optimistic view of the situation.

"It is a great gain to have clearly defined legalized academic and technical attainments, accompanied by the greatest security as to personal character that law and education can afford, since this sets upon veterinary science a seal of dignity in the eyes of the law and the public.

"An illegal practitioner rests under a serious cloud, his clients know of his shortcomings and disrespect him; he cannot enforce the payment of a fee. If hiding under cover of an assistantship, he cannot command a full salary because he does not possess the independence to establish a legal practice himself in case of dissatisfaction and so must submit to the possible galling dictation of his principal, and in case of the latter's death, retirement or removal, he is out of employment and legal opportunity.

"If, in addition, the teaching schools come forward with a sufficient supply of practitioners of a high grade, we may safely trust to the future the solution of the problem of legal veterinary practice in New York and rest assured that we shall have an efficient and dignified profession in harmony with the demands of our agricultural, live-stock and public health interests and our highest professional ideals."*

The Secretary then read the minutes of the meeting of 1905, and, after a single correction, or addition, they were approved.

THE ATTENDANCE.

The calling of the roll was dispensed with, and the Secretary was directed to obtain a list of those in attendance by means of a book of registration, passed around the room, as has been done in previous years. While this system has always failed to secure a complete registry of all in attendance, it was a greater failure at Buffalo than ever before, and we would suggest that the

* It appears that some hearers misinterpreted the statistics which appear in this address as indicating the President's opposition to the present requirements of admission in the veterinary colleges in the State of New York, but such is not the case, as President Williams states that he is heartily in favor of maintaining the present standards for admission.

Society adopt some other means of securing the names of members and visitors attending the meetings. The system adopted by the A. V. M. A. is much better. It places a member of the local committee at the door of the hall, and keeps him there during the entire meeting; every person entering the hall must secure a badge, and in order to get this must sign a card, with his name, degree and address. At New Haven red cards were used by members, yellow by visiting veterinarians, white for ladies and lay visitors. This year it appears to us that the names of not more than three-quarters of those in attendance were placed upon the registry, which were as follows:

George H. Berns, Brooklyn; Carr R. Webber, Rochester; Claude D. Morris, Binghamton; W. G. Hollingworth, Utica; E. B. Ackerman, Brooklyn; P. J. Axtell, Deposit; W. H. Pfyfe, Millerton; E. J. Nesbitt, Poughkeepsie; Roscoe R. Bell, Brooklyn; J. W. Corrigan, Batavia; C. E. Clayton, N. Y. City; D. W. Cochran, N. Y. City; Chas. J. Miller, Ithaca; W. N. D. Bird, Buffalo; P. A. Fish, Ithaca; G. S. Hopkins, Ithaca; Frank Hunt, Jamestown; F. G. Shepard, Gowanda; Alex. Findlay, Camden; R. Perkins, Warsaw; Wm. H. Kelly, Albany; Harry S. Beebe, Albion; N. D. Backus, Geneva; D. P. Hilton, New York; A. J. Truxill, Auburn; H. R. Ryder, Buffalo; W. L. Williams, Ithaca; W. L. Baker, Buffalo; John P. O'Leary, Buffalo; E. I. Smith, Cherry Creek; B. R. Wilber, Randolph; E. L. Volgenau, Buffalo; J. F. DeVine, Goshen; W. J. McKinney, Brooklyn; J. W. Turner, Lyons; J. L. Wilder, Brooklyn; Thomas Burns, Watertown; F. E. York, Brookfield; A. G. Tegg, Rochester; F. D. Holford, Avon; C. H. Taylor, Niagara Falls; James T. Twitty, Buffalo; Joseph Whytock, Buffalo; N. N. Leffler, Batavia; W. L. Mills, Perry; A. S. Miller, East Aurora; D. J. Holton, Le Roy; A. H. Twitty, Buffalo; C. F. Day, Warsaw; Geo. L. Mignerey, Buffalo; G. T. Stone, Binghamton; W. S. Eggleston, New Berlin.

The following visitors from neighboring States signed the register: Thomas E. Smith, Jersey City, N. J.; Wm. H. Gribble, Washington C.H., Ohio; C. H. Case, Akron, Ohio; L. H. Howard, Boston, Mass.; Benj. D. Pierce, Springfield, Mass.; S. Brenton, Detroit, Mich.; J. Black, Richmond, Mich.

The following veterinarians who did not sign the register were observed by the REVIEW correspondent: Wm. M. Simpson, Malden, Mass.; James Law, Ithaca, N. Y.; Wilson Huff, Rome, N. Y.; S. H. Burnett, Ithaca, N. Y.; E. J. Sullivan, Saratoga Springs; Walter J. Taylor, Ithaca, N. Y.; John O.

Moore, Wilson, N. Y. ; J. E. Smith, W. E. Stocking, and P. D. Johnson (Genesee Valley Association); J. H. Taylor, Henrietta, N. Y. ; O. B. French, Honeoye Falls, N. Y.

The Secretary then read his report, showing the work of his office for the past year, and followed it by his report as Treasurer. This latter report was the most satisfactory instrument emanating from this office in many years. It showed that the Society was entirely out of debt and there was a balance in the treasury of several hundred dollars, notwithstanding that one large obligation which had been hanging over the Society for a number of years had been liquidated.

NEW MEMBERS.

The following applications for membership were favorably reported upon by the Board of Censors, and they were elected:

John O. Moore, V. S. (Ont. V. C. '92), Wilson.

F. W. Andrews, D. V. M. (N. Y. S. V. C. '05), Mt. Kisco.

G. D. Holford, D. V. M. (N. Y. S. V. C. '02), Avon.

E. J. Sullivan, D. V. M. (N. Y. S. V. C. '06), Saratoga Springs.

Ed. Rafter, V. S. (Ont. V. C. '95), Hamburg.

Reports of Committees.

Board of Censors.—Favorably the five names elected to membership. Adopted. To expel Dr. Joseph Sutterby, of Le Roy, for unprofessional conduct in advertising patent medicines. Adopted.

Special Committee for Advancement of the Army Bill.—Chairman Morris detailed his efforts in behalf of the veterinary service of the U. S. Army, reading correspondence with senators and congressmen. He believed that, although it appeared that the program in Washington was to pigeon-hole all army measures during the 59th Congress, there is a strong hope of raising the bill during the coming session, and he asked that every veterinarian proceed to work upon their representatives at Washington so that every congressman will be familiar with the measure and be made to feel that there is a strong demand for the improved veterinary service. Dr. Law also told of his correspondence in behalf of the bill. A resolution was later adopted by the Society embodying the recommendations of the Committee.

Committee on By-Laws.—Chairman Berns submitted an entire revision of the by-laws, as there have been so many additions and erasures during the past few years that the old printed form was no longer a guide to the members. In addition, they

were greatly simplified by cutting out all the irrelevant and ambiguous wording which so freely characterized the by-laws, and substituting language which conveyed the intent of the law in the fewest and plainest words. The Secretary was directed to have the new by-laws printed and a copy sent to each member, so that when they come up for adoption in 1907 every one will be familiar with the changes and can vote intelligently upon the subject.

Prosecuting Committee.—Chairman Clayton reported verbally that very little had been done, for the reasons that veterinarians sent in complaints against offenders in their localities, without competent evidence to prosecute, in many instances the charges brought were unsigned, and that the Prosecuting Committee would not undertake to journey over the state and camp on the trail for days to secure evidence against offenders; that insufficient money is available in the fund, and that the law was greatly in need of amending, so as to make the offence of practicing without registration a misdemeanor, as is the case with the medical law. This defect in the law was, after considerable discussion, referred to the Legislative Committee with instructions to have the law amended at the coming session of the legislature.

Legislative Committee.—Chairman Bell reported that no legislation in which the Society was interested had occurred at the last session of the legislature. That the committee had stood ready to work in the interest of the profession upon the first alarm, but nothing had been attempted which appeared to call for action.

Committee on Resolutions.—Chairman Hollingworth read the report of this committee, which consisted of condolences upon the death of Dr. John A. Bell, of Watertown; urging veterinarians to exert themselves in behalf of the veterinary service in the Army, and two reports upon veterinary education in New York State, one a majority (signed by Drs. Hollingworth and Bell), the other a minority (signed by Dr. Morris). The Society took up the minority report, which was against any proposition to reduce the entrance requirements of the colleges in the State, and, after a long debate, passed it by a large majority. Those speaking in favor of the report were Drs. Law, Morris, Baker, Fish, and others. In opposition were Drs. Ackerman and Bell.

PAPERS AND DISCUSSIONS.

On Tuesday afternoon the business of the Association had

been cleared away, and the reading and discussion of papers was begun. The first on the program was

"Education in New York State," and consisted in two essays by members, Dr. James Law, director of the State College, and Dr. Ackerman, a practitioner. The former in a long and scholarly paper, argued in behalf of the standard of 60 counts now in operation in New York State, claiming that, although the effect upon the schools has been to greatly deplete their classes, it was not different from the experience of similar movements in other schools; that they will soon recover from the depression wrought; that young men will seek out the schools that have the highest standard, and will compensate for the present apparent losses. He dwelt upon the example set in Europe, where the requirements are much higher than in this State, Germany and France now asking a Bachelor's degree, and he quoted from the September REVIEW to show that Italy is demanding it. Dr. Ackerman argued in an opposite direction—not against higher education or higher matriculation; but he claimed that New York State had jumped too far at one bound; that although the consummation was devoutly wished, it destroyed the power of our schools to be of real service to the profession, for while undoubtedly we can turn out better educated veterinarians we get so few to educate that we do not amount to very much in the sum total of the progress being made. He contended that if the Regents had permitted the veterinary schools to remain at 24 we would have graduated a larger number, who would have gone forth as the best educated men in the country, and their individuality and success would cause others to seek their education in these schools. On the other hand, the spectacle of New York's schools teaching empty benches would deter other States from following her example. He showed that New York was not supplying the annual losses by death in the veterinary ranks, and as few men graduating outside of the State ever qualify to locate here, a problem may arise very soon as to where our supply will come from.

The debate which followed was extended, and was participated in by the essayists, Drs. Morris, Baker, Bell, and others. The subject was rounded out on the following day by the Resolutions Committee presenting a majority and minority report, the former supporting the contention of Dr. Ackerman, the latter that of Dr. Law. The minority report was adopted by a vote more than double that of the majority resolution. So

that, so far as the State Society is concerned, the Regents' action in raising the count to 60 will remain the law for a year at least.

A night session was held on Tuesday, and the paper by Dr. W. G. Hollingworth on "Municipal Milk Inspection" was presented. It was very practical, and yet dealt with the subject in a highly scientific manner. The discussion following was full of interest and many valuable points were developed. Dr. Carr Webber told of some interesting experiences in the crusade for reform in the milk supply of Rochester, while Dr. Morris gave some valuable deductions from his large opportunities in the Borden Company, of which he is chief sanitary inspector. Drs. Law, Berns, Ackerman and Stone also contributed to the discussion.

At the conclusion of the session upon milk inspection, the meeting adjourned until Wednesday at 9 A. M., at which hour it promptly convened, and the program was resumed by Dr. J. F. De Vine's paper on "Volvulus, Intussusception and Colic," which consisted in the report of quite a number of such cases. This was augmented by a recital of a case of intussusception occurring in the practice of Secretary Stone, who urged immediate operation, while the pulse was strong and the patient's strength good, but delay in obtaining consent robbed the animal of all chance of surviving.

"Typhoid Influenza" was responded to verbally by Dr. G. H. Berns, he isolating from the large number of pink-eyes, influenzas, and shipping fevers, a class of cases characterized by gastrointestinal lesions, extreme prostration, and rapid death. He had just passed through an experience in a dealer's stable where \$4,000 worth of horses (15 head) had died in one month. Always a magnet for discussion, diseases of green horses did not fail in this instance to bring the practitioners to their feet, and for an hour or more the room was turned into a veritable dealers' hospital, and experiences were freely given as to etiology and treatment. Those participating were Drs. Morris, Bell, Hollingworth, Law, Williams, Gribble, Baker, Black, Simpson, Tegg, and others. Dr. Morris was of opinion that horses were affected at the localities from which they were secondarily shipped, intermediate stables, like Buffalo, or the cars upon which they are transported, and he thought the Bureau of Animal Industry should assume charge of these points of infection. The subject of prophylactic treatment was well discussed, and many had obtained excellent results by the use of influenza antitoxine.

"One Way of Treating Toe-and Quarter-Cracks" was the subject of a paper by Dr. Roscoe R. Bell, and it will be published in an early number of the REVIEW. It was discussed by Drs. Baker, Webber, Ackerman, Black, Cochran, Berns, Thos. Burns and others.

"Milk Fever," by Dr. Wilson Huff, of Rome, dealt with this subject in a rather original manner, the author believing the trouble originated in the intestinal tract, and was primarily a condition of indigestion.

It was greatly regretted that the comparatively few papers presented had consumed all the available time of the meeting, for it was found that in order to get lunch and catch the train for Maplewood Stock Farm, at Attica, the "business" of the meeting must be resumed prior to adjournment, and that no more papers could be read. This left ten numbers announced on the program without an opportunity of presentation. Some of these authors were not present and had not sent in their contributions; but there were quite a number who were not given an opportunity, although avowedly ready to present their papers. It was the intention originally to have an evening session after returning from Attica; but many preferred a banquet; then it was suggested that when the plates were removed the papers should be read in lieu of toasts; but when the time came the hour was so late that nothing could be done in that direction. The REVIEW has agreed to print all the papers which had been prepared and were not presented, as well as most of those which were discussed. The only business transacted after the banquet was the selection of the next place of meeting. New York City (Manhattan) and Ithaca were placed in nomination, the former by Dr. Clayton, the latter on behalf of Dr. Law. Dr. Bell seconded New York, and the vote was largely in its favor. So that next year the Society will meet in the Borough of Manhattan, New York City.

VISIT TO MAPLEWOOD HACKNEY FARM.

At 2.30 more than fifty veterinarians and a number of ladies boarded an Erie train for Attica, where they disembarked upon Maplewood Hackney Farm, walking the short distance to the barns with coats off, and perspiring freely, the weather being intensely warm. At the door of the farm office waiters were standing with trays filled with iced drinks, which were most grateful to the parched throats of the pedestrians. Dr. J. W. Corrigan was guide for the veterinarians, as he is the attending

veterinarian at Maplewood, and it was through his good offices that Mr. E. T. Gay, the genial superintendent, undertook to give the members of the State Society the greatest treat of their lives, for aside from the unsurpassed hospitality shown by Senator F. C. Stevens, owner of this finest hackney stock farm in America, if not in the world, the opportunity of witnessing the grand collection of magnificent equines, was a delight to be remembered throughout life. We shall not attempt to describe Maplewood, for pen cannot depict and brush cannot paint the beauties of this model establishment, set down in the heart of a magnificent agricultural region and environed by a beauty of foliage, hills and dales that bewitches one's sense of idealism in rustic perfection. Beside the beautiful shaded drive, with barns on either side, were placed rows of chairs for the guests, and after witnessing in a pasture-lot a herd of trotting-bred dams with their half-hackney foals gamboling at their sides, a veritable private horse show was presented. First a band of pure-bred hackney brood mares passed slowly in front of us, Mr. Gay giving the pedigree and performances in the ring as each individual passed in review. Then a glorious pair of chestnuts, full sisters, raised at Maplewood, were shown to harness, with knee and hock action sufficient to compete for the Waldorf-Astoria cup. Then a group of yearling hackneys, by Langton Performer, Fandango, and other noted stallions, were shown to halter at various paces, winning generous applause from those who viewed them. Successively two-year-olds, three-year-olds, four-year olds and adults were brought from an endless stud of more than 350 hackneys. They were walked, trotted, and placed at rest, the veterinarians viewing them with the practiced eye of experts. Following these exhibits, team after team of horses, the perfection of conformation, breeding and training, were passed up through the shady drive, until finally came the climax of the afternoon: The imperial Fandango, with two of his sons, the lordly Langton Performer and two of his best get, and, although they have frequently paraded before applauding multitudes at Madison Square Garden and other great horse shows, they never received sincerer hand-clapping in their triumphal careers.

Reluctantly relinquishing the feast of eye and mind, Mr. Gay directed us to one of the large enclosed rings, upon entering which we found a large table loaded with refreshments upon which to feast our appetites. Full justice was done to the good things, and at its conclusion one of our number was

delegated to express the appreciation of Maplewood's guests for the great treat we were permitted to enjoy, and after a few words in acknowledgment by our host, three rousing cheers were given for Senator Stevens and his establishment. When a group picture had been taken, the entire company was loaded into ten vehicles, many horsed by blooded stock, and were driven to Attica Station, two miles distant, where the train was boarded back to Buffalo.

After an hour's journey on the Erie with its soft coal and open windows the bath-tub was inevitable, which delayed the opening of the banquet until a late hour. Some thirty-five sat down to a fine course dinner, intending to take up the program which had been cut short when the time arrived to go to Maplewood, but at the completion of the feast the hour was too advanced for anything beyond the choice of the next meeting place.

THE CLINIC.

The clinic was held on Thursday at James T. Twitty's Riding Academy, at 26 East North Street, beginning at 9 A. M. The riding ring had been prepared for the occasion, and, while no table nor other paraphernalia for restraining animals, excepting apparatus for casting, the place was well adapted for clinic purposes, there being abundance of side light and lots of room. The clinic at Buffalo could not in any respect compare with those at Ithaca and Brooklyn, but when it is borne in mind that one local man had to bear the burden of all the preparation and arrangements, it was a remarkable feat which Dr. W. L. Baker performed. True, he had the assistance of Dr. Corrigan and Dr. Tegg, but both of these were non-resident, and therefore could not attend to the details required for such a meeting. All in all, the clinic was creditable, and if it were not for the comparison made with the unsurpassable events of the past four years, it would have been considered an excellent demonstration. To prepare such a clinic as was given at Brooklyn and Ithaca would require that one or several men devote exclusive time to it for several weeks, and go to considerable expense in the preparation. In the former case Dr. Berns' hospital was ready prepared, with tables, stocks, and every appliance, and the same can be said of Ithaca. How, then, could a riding academy be put in condition to give comparable results. At New Haven the better facilities were the work of a local committee of eight, with sufficient funds to meet all requirements. All in all, Dr. Baker has every reason to feel sat-

ified with the results of his endeavors, and some of the interesting cases he furnished were exceedingly well adapted for the occasion.

The following is a list of the cases presented :

I. Bay gelding, roarer. Cast and secured with side-lines. Chloroformed by Dr. Axtell. Surgeon, Dr. W. L. Williams, assisted by Drs. W. G. Hollingworth and C. H. Case.

II. Bay horse, pseudo-hermaphrodite (*hermaphroditismus spurius*), having a rudimentary penis passing out through a circular opening in the perineum, the testes retained under the skin high in the flank, there being no pendulous scrotum. The animal was cast and secured as for castration. Chloroform anæsthesia by Dr. Axtell. An incision made at a point which would represent the sheath, and through this opening the penis was drawn, the false glans removed for about three inches, and the original point of exit scarified and sutured. The testicles were then removed, and the animal released, taking but a few minutes to emerge from the anæsthetic. Surgeon, Dr. Williams.

III. Bay gelding, ridgling. Cast and secured in the same manner as No. II. The left testicle had been removed. The right one was rather difficult to locate, but was finally brought forth. Surgeons, Drs. J. F. De Vine and W. L. Williams.

IV. Bay gelding, fistulous tract on left side opposite last asternal rib. A long probe revealed a tract about fourteen inches in depth, running down on the inside of the rib, discharging foul-smelling pus. It was discovered that the rib had been broken in several places, and pieces of the necrotic bone were removed. Operation was deemed inadvisable at the present, but the surgeon thought a counter-opening could be successfully made later. Surgeon, Dr. W. G. Hollingworth.

V. Brown mare, farcy. This animal had broken out with many small abscesses along the course of the lymphatics on the side and neck three days previously, which some of the local veterinarians thought was a simple suppurative lymphangitis. In explanation of this it may be said that glanders is extremely rare in Buffalo, Dr. Baker averring that he had never come in contact with a case in all the years he had practiced in that city. When the practitioners from Gotham, who see about as many cases of glanders as they do colic, cast their eyes upon the characteristic farcy buds there was no romance in the disease: it was glanders and nothing else. To confirm their opinion, however, a specimen of blood was drawn from the jugular

and given to Dr. Berns, and upon his return to Brooklyn, Mr. Cassius Way applied the agglutination test, with characteristic reaction in eight hours (1:800). The test with mallein was also positive.

VI. Bay mare, stringhalt both hind legs. Cocaine injected over each peroneal tendon. Animal twitched and front foot held up. Peroneal tenotomy, subcutaneous, each leg, by Dr. S. Brenton, Detroit, Mich.

VII. Bay gelding, bone spavin, off leg. Operation, sciatic neurectomy. Cocaine locally. Surgeon, Dr. C. H. Taylor, Niagara Falls.

Dr. Baker writes that all the held-over and delayed cases were operated upon by himself and others on the following day, and he regrets that some interesting demonstrations were lost to the Society. He also states that all the cases operated upon at the clinic are doing well.

PATHOLOGICAL EXHIBIT.

Dr. W. Reid Blair, Pathologist of New York Zoölogical Park, sent a large number of pathological specimens to the meeting. These were placed on exhibition at the clinic, and were closely studied by the members and visitors. They were not identical with those shown at New Haven, for Dr. Blair shipped that collection back to the Park and rearranged them for the State meeting, replacing many of them by other specimens.

1. Five large intestinal calculi, from the cæcum of horse.
2. Several lungs, livers, spleens and kidneys, from monkeys, illustrating typical forms of monkey tuberculosis.
3. Tumor, lipoma, from the mesentery of a horse.
4. Tumor, fibroma, from the skin and fascia covering inner surface of the thigh of a horse.
5. Tumor, myxo-sarcoma, from the abdominal cavity of a Japanese raccoon-dog.
6. Tumor, actinomycotic, from the salivary gland of grizzly bear.
7. Heart of prong-horned antelope showing *Cysticerci cellulosa*.
8. Heart of wolf containing blood filariæ (*Filaria immitis*) in the right ventricle.
9. Actinomycosis of liver and diaphragm, from American prong-horned antelope.
10. Lung of American elk, showing thousands of bronchial filariæ in the bronchial tubes.

11. Uterus, fallopian tubes and ovaries of a mule deer, showing all infected with tape-worm hydatids (*Cysticercus ten-uicollis*).
12. Several large tape-worm cysts, from Asiatic mountain sheep, American antelope and deer.
13. Cystic liver, from a deer.
14. Thirty-two feet of tape-worm, from a polar bear.
15. Heart of South American monkey showing blood filariæ in the ventricles (*Filaria gracilis*).
16. Liver of wild turkey, showing characteristic lesions of the disease known as "Infectious entero-hepatitis" (Smith).

NOTES OF N. Y. S. V. M. S. MEETING.

Dr. Nelson P. Hinkley was frequently seen flying about the streets in his auto, and with regulation cap and increased avoirdupois resembles somewhat the German Emperor.

Many of the members and visitors spent the afternoon of Thursday at Niagara Falls, taking the round trip on the Gorge Railroad, and visiting points of interest, and a few continued the trip to Toronto.

It is remarkable how one rebels when one's arrangements miscarry. Dr. Baker had plenty of clinic cases, many more than could be reached in the time allotted, and yet he was worried because some of those he had counted on failed to materialize.

There was a large delegation from the Genesee Valley Association. We noticed the following members of that thrifty organization at Buffalo: Drs. A. George Tegg, Carr Webber, J. E. Smith, P. I. Johnson, D. P. Webster, J. H. Taylor, N. N. Leffler, H. S. Beebe, J. W. Corrigan, F. D. Holford, J. O. Moore, O. B. French, W. E. Stocking, and J. L. Wilder.

Dr. John Wende was present at the clinic and in the hotel corridors; but did not honor the society at any of its seatings by occupying a chair. The old wounds in the ranks of ten years ago are very slow in cicatrizing; we hope, however, that they are granulating. There should be no strife among the members of this profession, save in striving to show who can serve the science best.

While there were not a great number of ladies present, those that did attend were splendidly entertained, and they enjoyed every minute of their stay. We gathered the names of Mrs. George H. Berns and Miss Berns, of Brooklyn; Miss Smith, of Jersey City; Mrs. E. J. Nesbitt, of Poughkeepsie;

Mrs. J. L. Wilder, of Brooklyn; Miss Wilder, of Akron; Mrs. A. J. Tuxill, of Auburn; Mrs. L. H. Howard, of Boston; Mrs. W. L. Baker, of Buffalo, and others whose names the REVIEW correspondent did not get.

There were many veterinarians present from neighboring and some Western states. From Massachusetts came Benjamin D. Pierce, of Springfield; Wm. M. Simpson, Malden, and L. H. Howard, of Boston. Michigan sent her loyal sons, Drs. S. Brenton, of Detroit, and J. Black, of Richmond, both of whom entered into the spirit of the meeting with their characteristic zest. Ohio was represented by the many sided Secretary of her State Association, Wm. H. Gribble, of Washington C. H., who writes poetry with as much grace as he displays in the use of the scalpel, and Dr. C. H. Case, who, with Dr. Gribble, has been engaged in a crusade against glanders under the direction of State Veterinarian Paul Fischer. New Jersey had but one representative, but what she lacked in quantity was fully compensated for in quality, for in Dr. Thomas E. Smith, of Jersey City, she sent a most loyal sponsor.

SOUTHERN ILLINOIS VETERINARY MEDICAL AND SURGICAL ASSOCIATION.

The seventh annual meeting of this Association met in the City Hall at Marion, Ill., Tuesday, Aug. 7, 1906, for a three days' meeting, with Dr. Bost, of Fillmore, Ill., in the chair. The meeting was called to order by the President, roll-call showing the following members present: Drs. F. N. Jensen, E. E. Downing, A. M. Hart, J. P. Dartro, J. C. Jean, Wm. Hockman, W. J. Hockman, W. H. May, C. W. Pumroy, T. M. Treece, G. J. Otke, J. R. Koonce, S. Snider, W. H. Cox, C. F. Sanders, A. Gould, G. L. Bundy, W. W. Plater, W. A. McMillan, W. A. Wilkinson, J. H. Mace, L. M. Jones, W. A. Norris, J. Keltner, G. W. Forrest, M. Melton, E. Russell, J. N. Green, J. H. Stuck, D. Scot, P. Harrison, M. Austin, Smith, Snider, W. Wilson, J. B. Crowell. Visitor, Dr. A. Travis, of Litchfield, Ill.

The minutes of the January meeting were read and approved. The following applications of new members were read: Drs. M. Austin, L. M. Jones, G. W. Forrest, M. A. Norris, and, after passing the required examination before the Board of Censors (composed of Drs. E. E. Downing, Farina; J. B. Crowell, Marion; F. N. Jensen, Centralia; T. M. Treece,

Wolf Creek ; C. W. Pumroy, Ullin), were reported to become members of the Association.

PAPERS AND DISCUSSIONS.

"Ophthalmia," by Dr. E. E. Downing, Farina. Discussed by Drs. Crowell, Jensen and Pumroy.

"Filaria Irritans," by Dr. A. M. Hart, Avena. Discussed by W. H. Cox, G. L. Bundy and W. H. May.

"Diseases of the Hock," by Dr. J. B. Crowell, which brought forth a very interesting discussion by the following: F. N. Jensen, L. A. Stout and G. A. Elliot.

Meeting adjourned till 7.30 P. M.

7.30 P. M. Meeting called to order by the President. Address by ex-President E. E. Downing on "The Advancement of Veterinary Science;" responded to by Dr. A. Travis, of Litchfield.

Meeting adjourned till 7.30 A. M., Aug. 8.

Aug. 8, 7.30 A. M., meeting called to order by the President.

"Splints, Causes and Treatment," by Dr. J. R. Koonce. Discussed by C. F. Sanders, J. H. Mace, and M. Austin.

"Catarrhal Fever," by G. A. Elliot. Discussed by J. B. Crowell, W. H. May, F. N. Jensen.

"Fistula," by C. W. Pumroy. Discussed by V. A. Bost, W. H. Cox, G. L. Bundy, and M. A. Hart.

"Castration," by W. H. Cox. Discussed by Dr. L. A. Stout, Dr. Melton, W. A. C. Wilkinson.

Meeting adjourned to meet at the Fair Grounds for clinical work at 1.00 P. M.

THE CLINIC.

By request of the Association, Dr. A. Travis, of Litchfield, Ill., was asked to take charge of clinical work.

Dr. Travis called for order in the amphitheatre, with about 200 citizens of Marion present, besides the members of the Association.

I. Mule, eight years old; fistula over squamosal. History: Snagged when two years old; operated upon three times. Mule cast and secured. Piece of bone resembling point of rib removed. Operator, Dr. A. Travis.

II. Bay mule, enlargement of sesamoid bone. History unknown. Fired and blistered by Dr. Travis.

III. Brown mare, six years old, ulcerated third upper molar. Extracted by Dr. J. B. Crowell.

IV. Black mule, four years old, capped hock. Blistering advised.

V. Colt, seven months old, scrotal hernia. Operated on by Dr. A. Travis.

VI. Sorrel filly, two years old, tongue lolling. Amputation of same by Drs. Travis and Crowell.

VII. Bay draft mare. Carcinomatous tumor on right shoulder. Local anæsthesia applied. Removed by Dr. A. Travis.

VIII. Passing of Phillips' stomach tube by Dr. A. Travis.

IX. Gray mare, ten years old, bone spavin. History: Animal had been lame about two years. Animal cast and placed under an anæsthetic. Cunean tenotomy by Dr. A. Travis.

Adjourned till Aug. 9, 7.30 P. M.

'SECOND DAY.

Thursday, Aug. 9, 7.30 A. M., meeting called to order by the President.

PAPERS AND DISCUSSIONS (CONTINUED).

The following papers were read and discussed: "Navicularthrititis," by Dr. T. M. Treece. Discussed by F. N. Jensen, C. W. Pumroy, and L. A. Stout.

"Indigestion," by W. W. Plater, Carbondale. Discussed by Drs. A. M. Hart, G. A. Elliot, and L. A. Stout.

"Parturient Paresis," by Dr. C. Williams, of Mt. Vernon. Discussed by Drs. A. M. Hart, W. H. Cox, T. L. Bundy, and M. Austin.

Meeting adjourned to meet at Dr. Crowell's hospital to finish clinical work.

CLINIC (CONTINUED).

X. Brown gelding, ten years old, supracarpal tenotomy. Operation by Dr. Travis.

XI. Ovariectomy (bitch), by Dr. Travis.

XII. Caponizing roosters, by Dr. Travis.

XIII. Castration, two ridglings, by Dr. Travis.

XIV. Gray mare, twelve years, stringhalt. Peroneal tenotomy, standing, by Dr. Travis.

XV. Removal of two water-seeds in mule, by Dr. Travis.

XVI. Mule, seven years old, decayed second upper molar. Trephined and removed by Dr. L. A. Stout.

XVII. Mule, nine years old, with exostosis on inferior maxilla. Removed by Dr. Travis.

Meeting adjourned to meet in January, 1907, at Mason, Ill.

L. A. STOUT, *Secretary*.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President Law has made the following appointments of

COMMITTEES FOR 1906-07:

Executive.—W. H. Dalrymple, chairman; M. H. Reynolds, Roscoe R. Bell, S. Brenton, D. S. White, W. L. Williams. *Ex-officio*, James Law, J. G. Rutherford, L. A. Merillat, W. T. Monsarrat, E. B. Ackerman, H. Jensen, R. P. Lyman, G. R. White.

Finance.—J. J. Repp, chairman, C. E. Cotton, R. W. Ellis.

Publication.—C. J. Marshall, chairman; R. P. Lyman, A. M. Farrington, E. M. Ranck, J. B. Paige.

Intelligence and Education.—Leonard Pearson, chairman; D. Arthur Hughes, M. H. Reynolds, George R. White, Adolph Eichhorn.

Diseases.—V. A. Moore, chairman; A. D. Melvin, L. A. Merillat, Chas. H. Higgins, John R. Mohler.

Resolutions.—S. Stewart, chairman; Austin Peters, J. L. Robertson, Wm. Herbert Lowe, M. E. Knowles.

Necrology.—George H. Berns, chairman; A. H. Baker, Wm. Dougherty, E. L. Quitman, J. E. Ryder.

Army Legislation.—J. P. Turner, chairman; T. Earle Budd, A. S. Cooley, J. H. McNeil, W. H. Kelly.

President Law has also appointed the following

RESIDENT STATE SECRETARIES.

Alabama.—C. A. Cary, Auburn.

Arizona and New Mexico.—J. C. Norton, Phoenix.

Arkansas.—R. R. Dinwiddie, Fayetteville.

California.—Carl W. Fisher, San Mateo.

Colorado and Utah.—C. D. Lamb, Denver.

Connecticut.—G. W. Loveland, Torrington.

Delaware.—H. P. Eves, Wilmington.

District of Columbia.—A. D. Melvin, Washington.

Florida.—J. G. Hill, Jacksonville.

Hawaii.—W. T. Monsarrat, Honolulu.

Illinois.—L. A. Merillat, Chicago.

Indiana.—R. A. Craig, Lafayette.

Iowa.—G. A. Johnson, Sioux City.

Kansas and Oklahoma.—S. Stewart, Kansas City.

Kentucky.—D. A. Piatt, Lexington.

Louisiana.—M. M. White, Shreveport.

Maine.—A. Joly, Waterville.

Maryland.—F. H. Mackie, Baltimore.

Massachusetts.—B. D. Pierce, Springfield.

- Michigan*.—G. W. Dunphy, Quincy.
Minnesota.—C. E. Cotton, Minneapolis.
Mississippi.—J. C. Robert, Starkville.
Missouri.—J. M. Phillips, St. Louis.
Montana.—M. E. Knowles, Helena.
Nebraska.—A. T. Peters, Lincoln.
Nevada and Idaho.—J. O. Jacobs, Reno.
New Hampshire.—Lemuel Pope, Jr., Portsmouth.
New Jersey.—J. T. Glennon, Newark.
New York.—W. H. Kelly, Albany.
North Carolina.—Tait Butler, Raleigh.
North Dakota.—L. Van Es, Fargo.
Ohio.—Paul Fischer, Columbus.
Oregon.—J. M. Creamer, Portland.
Pennsylvania.—J. W. Adams, Philadelphia.
Philippine Islands.—G. E. Nesom, Manila.
Porto Rico.—T. A. Allen, San Juan.
Rhode Island.—T. E. Robinson, Westerly.
South Carolina.—L. A. Klein, Clemson College.
South Dakota.—E. L. Moore, Brookings.
Tennessee.—G. R. White, Nashville.
Texas.—M. Francis, College Station.
Vermont.—F. A. Rich, Burlington.
Virginia.—Jno. Spencer, Blacksburg.
Washington.—M. Rosenberger, Pullman.
West Virginia.—L. N. Reefer, Wheeling.
Wisconsin.—W. H. Perrigo, Milwaukee.
British Columbia.—S. F. Tolmie, Victoria.
Cuba.—N. S. Mayo, Santiago de las Vegas.
Manitoba.—F. Torrance, Winnipeg.
North West Territory.—J. F. Burnett, Macleod.
Nova Scotia.—W. H. Pethick, Antigonish.
Ontario.—J. H. Tennent, London.
Argentina.—Pedro L. de Carril, Buenos Ayres.
Uruguay.—D. E. Salmon, Montevideo.
South Australia.—J. Desmond, Adelaide.

In addition to the list of New Jersey veterinarians in attendance at the New Haven meeting of the A. V. M. A. published in the September REVIEW, Dr. Henry Vander Roest, of Newark, and Dr. B. F. King, of Little Silver, were present as delegates from the Veterinary Medical Association of New Jersey.

In the list of those in attendance upon the recent New Haven meeting, published in the September REVIEW, there

were omitted the names of Drs. S. Brenton, and Harry E. States, of Detroit, Mich., both of whom are members. These two names will bring the list of members in attendance up to 146, and will swell the total attendance to 376.

The following letter from Dr. John R. Mohler, Chief of the Pathological Division of the Bureau of Animal Industry, is in relation to Case XVII, which occurred in the Clinic at New Haven, reported in September REVIEW, page 766: "Referring to the specimens obtained from the conglomerate nodular growths on the thigh of a bay gelding, 10 years old, presented at the New Haven clinic of the A. V. M. A., you are advised that a microscopic examination of the tissue shows that the tumors should be classed as fibro-sarcomas. The tendency of tumors of this variety is to invade normal tissue following the course of the blood and lymph vessels, where they spread widely and persistently, as was noted in this particular instance, and I am therefore of the opinion that operative removal of these growths would not have resulted satisfactorily."

THE NORTH CAROLINA VETERINARY MEDICAL ASSOCIATION held a two-day meeting July 5 and 6, at Winston-Salem. G. A. Roberts, D. V. S., West Raleigh, was elected President; W. G. McMackin, Raleigh, Vice-President; C. J. Fleming, Winston-Salem, Secretary, and Adam Fisher, Charlotte, Treasurer. Dr. Charles F. Dawson, State Veterinarian of Florida, was present.

A CIVIL SERVICE EXAMINATION is called for October 17th to secure eligibles from which to make appointments to fill a vacancy in the position of veterinary inspector at Honolulu, Hawaii, at \$1,400 per annum, and similar vacancies as they may occur in the United States, at \$1,200 per annum each, in the Bureau of Animal Industry. The Department states that the number of eligibles obtained as the result of the examination held on August 8 will not be sufficient for the needs of the service, and qualified persons are therefore urged to enter the examination. Applicants must be graduates of veterinary colleges. Those graduating prior to or during 1897 will be admitted if from colleges having a course of not less than two years in veterinary science; since that time must be graduates of colleges having a course of not less than three years. Applications should be made to the U. S. Civil Service Commission, Washington, D. C., for application form 1312.

NEWS AND ITEMS.

DR. H. M. RINEHART, M. D. C., has removed from Colchester, Ill., to Blondinville, in the same State.

DR. G. W. BUTLER, B. A. I., has been transferred from Eau Claire, Wis., to Louisville, Ky., and placed in charge.

CAPTAIN A. H. WADDELL, late of the Veterinary Department of the British Army, has located at Warrenton, Va.

DR. FRED C. CATER, veterinarian to the Bureau of Agriculture, Philippine Islands, sailed from Manila for New York on Sept. 1.

AN illustrated article on "Operating Tables," by Dr. W. L. Williams, is now in our hands, and will appear in the November REVIEW.

WE find in a recent number of the *Breeder's Gazette* a *résumé* of the important work done at the 43d annual meeting of the A. V. M. A.

"THE MEAT INSPECTION MOVEMENT AND AFTER," by Dr. D. Arthur Hughes, has been specially prepared for the October REVIEW, and no veterinarian should fail to read it.

THE scientific investigations which Prof. Charles A. Doremus and Dr. W. W. Yard have been engaged in have been completed, and Dr. Yard has returned to quarantine work in Colorado.

THE close of the present session of the New York State Veterinary College will mark the retirement by the age limitation of Director James Law, who has guided its fortunes since its establishment.

VETERINARY DIRECTOR-GENERAL RUTHERFORD, of Canada, is testing the open-air treatment of cattle that have reacted to the tuberculin test, on a farm a short distance from Hull. The cattle are of different breeds and ages, including some calves.

IN Pennsylvania there were registered 2,000 veterinary practitioners under the old law; reregistration with the Examining Board has reduced this number to 802. Many have died, moved from the State, or were registered illegally, and 360 are unaccounted for.

"I CANNOT SAY ENOUGH of the excellent things that have been in the REVIEW the last year, and I cannot tell you how much I appreciate it or how much good it has been to me. I can't see how any practitioner could get along without it and keep up with the times."—(G. L. Meholin, V. S., Fairfax, S. D.)

AUTOMOBILE RACES, which have been a feature of the New York State Fair, at Syracuse, for several seasons, were ruled off this year and the track given over exclusively to the horse, who won the greatest triumphs at speed and in the show ring.

AT the semi-annual meeting of the Pennsylvania State Veterinary Medical Association, held at Gettysburg, Sept. 19, the principal speaker was Dr. Leonard Pearson, whose subject was "The Latest Developments in Vaccination Against Tuberculosis and the Value to Animal Husbandry of the Practical Application of the Method."

THERE appears to be serious trouble in Vermont over the sale of condemned cattle by the Cattle Commissioners. In the political fight for the Governorship last month the subject was worked up as an issue, and an investigation seems to show that there was foundation for the charges. A specific case was investigated, showing that 200 head of cattle, condemned for fertilizer, were sold to dealers for \$11 per head, and these dealers converted them into food products. Dr. F. A. Rich, veterinarian to the Commission, has been dismissed.

DR. DAVID ROBERTS, Waukesha, Wis., has been appointed State Veterinarian of Wisconsin in place of his brother, Evan D. Roberts, whose death was recorded in the September REVIEW. There is considerable feeling among the veterinarians of Wisconsin against Dr. Roberts, who conducts a patent medicine establishment, gives away a book of instructions to stock-owners, and covers the State with wagons selling his nostrums.

AN IMPORTANT BULLETIN just issued by the Bureau of Animal Industry is entitled "The Tuberculin Test of Hogs and Some Methods of their Infection with Tuberculosis," by E. C. Schroeder, M. D. V., and John R. Mohler, V. M. D. The recent increase in the frequency of the disease in swine led Dr. Melvin, Chief of the Bureau, to direct a number of experiments to test the value of tuberculin as a diagnostic for the disease in hogs, and also to gain information as to the manner in which these animals contract tuberculosis. The conclusion is reached that its application is practical for hogs, and the results are as reliable as for cattle, *provided the hogs are kept very quiet* for some time before and throughout the test. It is also shown that hogs contract tuberculosis through the ingestion of infected food, and the fæces of cattle that swallow tubercle bacilli are highly infectious for hogs that are exposed through eating them. Veterinarians should secure Bulletin No. 88, giving the full details.

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VETERINARY MEDICAL ASSOCIATION MEETINGS.

Secretaries are requested to see that their organizations are properly included in the following list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	August, 1907.	.....	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	Jan. 10, 1907.	Jersey City.	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	Call of President	New Haven.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y....	Sept., 1907.	New York City	G. T. Stone, Binghamton.
Schuylkill Valley V. M. A....	Dec. 19	Reading.	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Monthly.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	.....	.....	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n....	Feb., 1907.	Lansing.	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C....	April, 1907.	141 W. 54th St	W. C. Miller, N. Y. City.
Illinois State V. M. Ass'n....	Dec., 1906.	Chicago.	F. H. Barr, Pana.
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Sheboygan.	S. Beattie, Madison.
Illinois V. M. and Surg. A....	.....	Decatur.	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	Not Stated.	Winnipeg.	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n....	.....	.....	C. J. Fleming, Winston Salem
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	Oct. 3, 1906.	141 W. 54th St	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....	.....	Columbus.	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n....	1st Wed. ea mo	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n....	.....	Rochester.	J. H. Taylor, Henrietta, N. Y.
Iowa State V. M. Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n	2d Wed. Thur., Jan.	St. Paul.	C. A. Mack, Stillwater.
Pennsylvania State V. M. A...	March 5-6. '07	Philadelphia.	C. J. Marshall, Philadelphia
Keystone V. M. Ass'n.....	2d Tues. May	Philadelphia.	A. W. Ormeston, 102 Her- man St., Germantown, Pa.
Colorado State V. M. Ass'n....	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	January. 1907	Kan. City, Mo.	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n....	June and Dec.	Providence.	T. E. Robinson, Westerly, R. I.
North Dakota V. M. Ass'n....	.....	.....	J. A. Winsloe, Cooperstown.
California State V. M. Ass'n....	Mch. Je. Sep, Dec	San Francisco	C. H. Blemer, San Francisco.
Southern Auxiliary of Califor- nia State V. M. Ass'n.....	Jan. Apl. Jy, Oct.	Los Angeles.	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	Hans Jensen, Weeping Water
Kansas State V. M. Ass'n....	Jan. 8-9. '07.	Topeka.	Hugh S. Maxwell, Salina.
Ass'n Médécalle Vétérinaire	1st & 3d Thur. of each month.	Lect. R'm La- val Un'y Mon.	J. P. A. Houde, Montreal.
Francaise "Laval,".....	.....	.....	.....
Alumni Association A. V. Col.	April eachyr.	New York.	F. R. Hanson, N. Y. City.
Province of Quebec V. M. A...	.....	Mon. & Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	.....	.....	D. A. Piatt, Lexington.
Washington State Col. V. M. A.	Monthly.	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.	Jan. 4-5 '07.	Indianapolis.	E. M. Bronson, Indianapolis.
Iowa-Nebraska V. M. Ass'n....	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n....	.....	.....	E. P. Flower, Ba on Rouge.
Twin City V. M. Ass'n.....	.....	.....	S. H. Ward, St Paul, Minn.
Hamilton Co (Ohio) V. A.....	.....	Cincinnati.	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n..	J. C. Robert, Agricultural Col.

PUBLISHERS' DEPARTMENT.

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Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. Make all checks or P. O. orders payable to American Veterinary Review.

NOTICE.

DURING THE LATE MEETING OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION, NEW HAVEN, CONN., the order book kept by our representative containing memoranda of special instruments, inquiries, addresses, etc., was some time during the meeting, by parties unknown to our representative, mutilated to such an extent that we have lost the memoranda contained therein; and as we are anxious to fill these special orders and reply to inquiries, etc., we will consider it a favor if the doctors who left such memoranda, will correspond with us in regard to same.

Thanking the profession for the courteous treatment given our representative and the interest taken in our exhibit, we remain,

Very respectfully,

HAUSSMANN & DUNN Co.,
392 S. Clark St., Chicago.

J. H. WALTER, M. D., IN A LETTER TO THE WEST DISINFECTING COMPANY, describes his treatment in a case of diarrhoea in a horse. He says: Knowing full well the benefits of creosote with human beings, concluded to experiment with Chloro-Naptholeum; so had capsules made, containing one-half ounce Chloro-Naptholeum, five drachms spirits of camphor, U. S. P., and ten minims cantharides.

These were given three times daily before feeding for five days, since which time the diarrhoea has entirely stopped, the mare is taking on flesh, and is \$100 better than a month ago.

This was an extremely bad case, the disease being inherited from the sire. The camphor was simply used to overcome any deleterious effect on the heart from the Chloro-Naptholeum, and the cantharides to act as a diuretic. Will write two veterinary surgeons to-day, who are using Chloro-Naptholeum for this same purpose, and endeavor to get their report on same, which, when received, will gladly forward to you.

Yours very truly,

(Signed) DR. J. H. WALTER,
Baltimore, Md.

THE PUBLISHERS would call the readers' attention to the fact, that in addition to *transient advertisements* of "PRACTICES FOR SALE" and VETERINARIANS WANTED," in the *usual form*, on the upper half of the page opposite, there is also one in the eighth-page space below, opposite Dr. French's *permanent adv.*; headed "PRACTICE WANTED," and two "ASSISTANT WANTED," one "REVIEWS WANTED" and one "PRACTICE FOR SALE" advs., on the upper half of the inside back cover-page, that will interest them.

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